

Amateur Radio

Volume 78
Number 4
April 2010
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Software-defined Radio
We look at the Flex-3000

Inside:
Active loop antenna and
converter for VLF



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Amateur Radio

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Our cover this month



The VK9NA team on Mount Pitt in January: Michael VK3KH, Alan VK3XPD and Kevin VK4UH with their 1.2 m dish and mast holding other antennas.

Photograph by Kevin Johnston VK4UH. See their story commencing on page 23.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back issues

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Office (until stocks are exhausted), at \$8.00 each (including postage within Australia) to members.

Photostat copies

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Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's oldest National Radio Society, founded 1910.

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Editorial

Peter Freeman VK3PF

One century down

The middle of March saw celebrations held in Sydney to mark the centenary of the formal commencement of organised amateur radio within Australia. There are some brief reports in this issue and we may receive more details for inclusion in a future issue.

With that milestone passed, planning is full steam ahead for the WIA Centenary Annual General Meeting Weekend of Activities, to be held in Canberra over the last weekend in May. Members should have received their formal Notice of Meeting with the March issue of Amateur Radio. Further details can be found on the WIA website – simply click on the link on the lower right side of the home page to find all the celebration information.

I have had my arm twisted to prepare a presentation, so must attempt to find some time to research the topic to which I must speak. The challenge, I suspect, will be to decide the material to be included and what to leave out.

The future

As you will see in Michael Owen's Comment, planning for the next World Radiocommunications Conference is already underway. I recommend that you all read Michael's comments, as he highlights issues that, I believe, should be on the mind of every amateur licence holder, regardless of whether or not they are a member of the WIA. A key reason for the formation of an organised group of radio experimenters was to act as an interface to the authorities – this is probably even more important today than 100 years ago, given the increased pressure from many potential users for access to the radio spectrum.

I still hear individuals complaining about how some past event, usually many years ago, justifies a stance to not join the WIA. Have people failed to notice that we are effectively a new body, only a few short years old, but built on a foundation first laid in

March 1910? The structure of the WIA is now very different from that prior to the formation of the new national organisation, as opposed to the previous federal structure.

One aspect is still in place – the organisation still relies heavily on the contributions of many volunteers to undertake many tasks. But the Board is moving the organisation ahead.

Importantly, the WIA is still seen as the key voice for amateur radio by the ACMA. Individuals and smaller groups may be able to raise issues via local politicians, but our voice is strongest when we act and speak collectively.

I urge all members to speak to their fellow amateurs who are not members of the WIA and urge them to consider joining. The key point is that we have a stronger voice collectively. You may be able to complain about some aspect of the hobby, or put some particular view. The best way that can influence the direction of the WIA and therefore the hobby in Australia is to become a financial member AND to participate in dialogue with the organisation. This may be through letters to Board members, "Over to you" items to this magazine, via the coordinator for a particular activity (for example, the WIA Awards scheme), or simply by attending the Open Forum at the Annual General Meeting. Of course, a consensus position may be reached that is in disagreement with your position, but at least you will know that your view has been heard and considered.

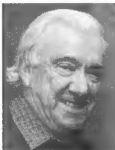
Our organisation will gain in several ways if membership increases. There may be more individuals willing to assist, even if only for a small defined task – for example, operating the VK100WIA station for a few hours during the six months that the callsign is available, through your local club. The budget bottom line will be a little better for the organisation, which means that there is more work that can be accomplished. But most importantly, having a numerically larger organisation will make our collective voice louder.

Join up a new member soon.

Cheers, Peter VK3PF

Editor

Yesterday, Today and Tomorrow



Michael Owen VK3KI

On Saturday 13 March 2010 I arrived in Melbourne from Bangkok, after five days at the third meeting of the Asia-Pacific Telecommunity Conference Preparatory Group for WRC 2012, the so called APG meeting, on behalf of IARU Region 3.

The next day I attended the opening of the new building at the Amateur Radio New South Wales property at Dural, which was also a celebration of the founding meeting in Sydney 100 years ago.

A highlight of the opening of the new building was the cutting of the cake by three of our older amateurs, David Thompson VK2BDT, born 1919, Pierce Healy VK2APQ born 1911 and Bill Hall VK2XT born 1912.

To me the combination of these activities was an extraordinary juxtaposition of the past, the present and the future.

The opening of the new building was very much the present, a facility where potential amateurs can be trained and assessed, a facility to attract those who could be interested in becoming radio amateurs, a facility for operational activities as well as providing the storage that seems always to be needed.

The past were people like Pierce Healy talking about who he could recall as his mentors or teachers all those years ago, when he became interested in wireless and Bill Hall showing me some of his very old magazines, including a QST from 1919.

But in a funny way the past was a mirror of the future.

As was pointed out in the articles in March 2010 issue of *Amateur Radio*, the inaugural meeting of the Institute of Wireless Telegraphy of Australia was to create a body better able to "protect legitimate experimenting",

or at least the interests of those who were experimenting or who wished to experiment with wireless.

What has that to do with the APG?

In the August 2009 Comment in *Amateur Radio* I wrote about the growing importance of the regional telecommunications organisations, and named the six that had been identified by ARRL CEO David Sumner K1ZZ. The regional telecommunications organisations seek to achieve agreement for a common position among their members, the national administrations of their member countries. That amounts to a block of votes for a particular position at a WRC.

The regional telecommunications organisation relevant for our part of the world is the Asia-Pacific Telecommunity, which has 34 member countries, including Afghanistan, Australia, Cambodia, China, Fiji, India, Indonesia, Korea, Japan, Malaysia, New Zealand, Pakistan, Philippines, Singapore, Thailand and Vietnam to name just some, and which covers that part of the world identified by the ITU as Region 3.

But this was the first time that I was able to observe our own Region 3 regional telecommunications organisation at work.

WRC 2012 has one agenda item of direct interest to the amateur service, agenda item 1.23: the proposal for a secondary allocation of about 15 kHz in parts of the band 415 – 526.5 kHz, and a number of other agenda items that could affect the amateur services indirectly.

I took the time to have a look at what had changed in the seven or eight years since the APG was meeting for WRC 2003, the WRC that addressed Article 25 of the Radio Regulations (the Article dealing with the amateur services) and the amateur allocations around 7 MHz.

Two things immediately struck me.

The APG has adopted procedures that make achieving a common position very much more likely today than in the period of preparation for WRC 2003, when unless there was strong support,

no position was the likely outcome.

Many administrations in Region 3 now regard the APG as being of much more importance than they did in 2002, when the third meeting of the APG for WRC 2003 was held.

One needs simply to compare the resource devoted by administrations to the APG then as against the resource devoted now, by looking at the number of delegates from a number of countries.

In 2002 China had 8 members in its delegation, and 2010 it had a delegation of 30 members, while Indonesia had 5 members in 2002 and in 2010 had a delegation of 21. In the same time Malaysia increased its delegation from 11 to 21, and New Zealand increased its delegation from 4 to 7. Australia also increased the number in its delegation and even Iran increased its numbers from 7 to 10.

The conclusion I have reached is that so far as the administrations in Region 3 are concerned, the meetings of the APG prior to a WRC have become an essential part of the WRC cycle.

Why does a WRC matter?

Because a WRC decision in relation to the amateur services, whether positive or negative, will eventually affect all amateurs.

What does that mean for the WIA?

It means that instead of looking at participating in the preparation for a WRC and the actual WRC, we need now to look at the preparation for and the participation in the APG, a week every year, and perhaps even two meetings in a year.

It means resource, primarily in people of skill and expertise, but also of funds to support those people.

The threats that the Institute of Wireless Telegraphy, soon to become the Wireless Institute of Australia, was formed to meet still exist.

They may be more complex, they may be different, but we still need a single, strong and clear voice to represent us as what is decided in the international arena does affect every Australian amateur.

WIAnews

Dick Smith Patron of the WIA's Centenary Celebrations

The WIA is very pleased to announce that Dick Smith VK2DIK has agreed to be Patron of the WIA's Centenary Celebrations.

Dick is one of Australia's best known entrepreneurs, businessman, aviator and modern day explorer. He obtained his amateur licence when he was 17.

He founded Dick Smith Electronics, the Australian Geographic and Dick Smith Foods.

He was made an Officer of the Order of Australia in 1999 for service to the aviation industry, and was the 1986 Australian of the Year.

In accepting the position of Patron for the WIA Centenary Celebrations, Dick Smith said "I am delighted to support an organisation that traces its history back 100 years but at the same time is looking to the future by encouraging a new generation of radio amateurs."

WIA Appoints Manager

The WIA Board met in Melbourne over 20/21 February 2010. Much of the time was spent considering the financial position, the provision of services for members and the future.

The directors recognised that the WIA now had the security of a contract with ACMA for the WIA to manage the examinations, the issue of certificates of proficiency and the management of callsigns but acknowledged that meeting the WIA's obligations under the contract meant that the office has to devote a significant part of its present resources to those tasks.

The Board also felt that the WIA had to reduce its reliance on volunteers for the provision of the administrative core which provides many of the services it offers to members and supports those offering other services.

The Board resolved to engage a manager. The Board believes that the current office workload justifies additional staff and that a manager will provide continuity and the WIA's ability to provide services to members will be enhanced.

For some months the WIA has been employing someone on a part time basis to provide assistance in the office. That person is Mal Brooks.

Whilst Mal is not yet an amateur, he comes with a background and experience, including experience as the Executive Officer of a not-for-profit industry association.

The directors fully recognise that the WIA will never be able to do the many things that it does without the work of dedicated and skilled volunteers. They also believe that at the heart of the organisation must be an administration that is effective, efficient, responsive and friendly. Mal will be a meaningful part of that administrative heart.

Board appoints new Director

The WIA recently announced that it had been informed by WIA Returning Officer, Chris Chapman VK3QB, that Phil Wait VK2ASD, Bob Bristow VK6POP and Chris Platt VK5CP had been elected unopposed as directors of the WIA.

As a new director, Chris Platt's term as a director commences at the conclusion of the WIA Annual General Meeting on Saturday 29th May 2010.

However, in light of the recent resignation of Ron Bertrand VK2DQ due to ill health, the WIA Board has appointed Chris Platt VK5CP as a director for the balance of Ron's term, until his appointment in accordance with the Returning Officer's declaration takes effect.

ARNSW Celebrates Centenary and Opens New Building

On Sunday 14 March 2010, Amateur Radio New South Wales opened its new building at the VK2W1 Dural site and at the same time celebrated its formation 100 years ago.

Over 100 members attended the celebrations of the Centenary of the formation of the movement which



has become today's WIA and marked the event with the cutting of the Centenary Cake by three "Elders", Pierce Healy VK2APQ born 1911, Bill Hall VK2XT born 1912 and David Thompson VK2BDT, born 1919.

(Full story page 39. Ed)

On Wednesday evening 10 March, Tim VK2ZTM and Mathew VK2YAP had a 20 minute live interview on ABC Radio Statewide Program covering the Centenary Celebrations.

Neil Penfold State AR Centre Opening

An estimated crowd of 150 people travelled from metropolitan Perth and from country locations as far away as Kalgoorlie to attend the official opening of the Neil Penfold State Amateur Radio Centre at Whiteman Park. The Centre is the home of the Northern Corridor Radio Group Inc. The NPSARC was officially opened by Neil Penfold VK6NE.

This magnificent Amateur Radio facility was built by club members over several years, providing the club with a wonderful facility for contesting and other club activities.

The day was celebrated with a car boot sale, sausage sizzle, "open house" of the clubrooms, a raffle and many face to face QSOs.

WIA National Inwards QSL Bureau Changes

Following a review of the current inwards Bureau operation, the WIA Board agreed to change the arrangements for Inward Bureau operation.

A new National Inwards QSL Bureau service is being introduced in an effort to expedite the availability of inwards cards from overseas bureaus for WIA members.

The Inwards Bureau has established a central P.O Box 2040 Bayswater Vic 3153, Australia for the new service.

All overseas bureaus are being notified of the change, being requested to amend their records and procedures and to send future VK card consignments to the central PO Box 2040.

QSL cards from WIA Members for overseas contacts should continue to be sent directly to the Outwards QSL Bureau, PO Box 3073, Teralba NSW 2284.

Got the ticket, got to get the station

Ross Pittard VK3CE and Geoff Emery VK4ZPP

vk3ce@amateurradio.com.au

This month we have another interesting contribution from Geoff Emery VK4ZPP (vk4zpp@wia.org.au). Thanks again Geoff and please, everyone, remember to keep the articles and feedback coming in.

All new licensees now have to pass a practical test to get their amateur ticket. One area that can consume much time is finding the right equipment that fits one's personal budget and area of interest.

These days there are recognised 'amateur' brands of equipment and accessories and generally they do the job they are designed for quite well. However, in days gone by, one of the amateur radio operator's best assets was a well stocked junk box. This grew and evolved as one continued in the hobby. Much of what was in the junk box was discarded commercial and military bits and pieces.

Although ex-military equipment is now as rare as hen's teeth, there is much to be found in the ex-commercial area. As the HF land mobile service disposes of older gear, things like power supplies and antenna matching units can be picked up cheaply by the Foundation licensee. Just because the brand name is not readily linked to amateur use does not mean the equipment should be overlooked. The laws of physics, upon which radio is built, do not change because of the manufacturer's name badge.

Another source of accessories is the CB market with many SWR/power meters and field strength meters that can be used successfully at Foundation power. As the mobile phone industry replaces equipment, 50 ohm terminations (dummy loads), which can work up to microwave frequencies are available second hand very cheaply. You may have to use an adapter if the RF connector is different from your station equipment but again these items

are available via internet shops at historically ridiculously low prices.

Now if you look back to the requirements of the Practical Assessment, as given in the 'Foundation Licence Manual' you will recall how to connect your transceiver through the meter/matcher to the antenna.

The easiest way to check a CB type SWR/power meter is to connect it to a dummy load. With your transmit power set to 10 W and the meter set on forward power (AM, FM or CW but not SSB) briefly key the transmitter and adjust the calibrate/sensitivity knob for full scale deflection as shown on the scale. If when you switch the meter to SWR, your meter shows close to 1.1:1 SWR then you know this meter will be fine to use. Do this on the bands that you can use from 80 m through to 10 m.

In the *Codan* brand antenna matching units supplied for many years with crystal locked land mobile and marine radios, the internal circuit appears to remain similar in various models. These are basically an L-match with the inductor wound over a specially shaped ferrite toroid. Some have ceramic insulators for connection of 'long wire' antennas, that is, end fed and some with SO-239 for coaxial cable connection. Some include a switch circuit allowing connection of two antennas.

An experiment conducted by Ray VK4TPT and Van VK4VAN from the Maryborough Electronics and Radio Group, MERC, proved that removing the ceramic insulated binding post on these type of units and replacing it with an SO-239 allowed the tuning of a range of usual amateur HF antennas. The test unit had provision for two antennas and the other connection remained unaffected by this modification thus allowing a choice of two antennas.

No doubt other makes of commercial land mobile and marine antenna matchers will work similarly to the *Codan* units. I noted that the marine version of these matchers suggest using a wire of about five to seven metres for maritime use. This means that this ATU would be good as a field day or travel accessory with the use of less than ideal antennas.

As with all bits of equipment, familiarity is the key to successful and easy use. Just as we 'play' with games machines, a new mobile phone or other things, we need to 'play' with our station so that adjustments and control of settings is no longer a chore. With the transceiver, using the dummy load instead of the antenna provides a way of getting used to what happens when we push different buttons and twiddle different knobs with the knowledge that we are not causing QRM if we go into transmit.

With many of the commercial ATUs there is a meter or lamp with instructions to tune for maximum deflection or greatest brightness. Ignore this as the radio may have been designed to emit significantly more power than the 10 W Foundation limit. Use your radio settings and the in-line power meter instead.

At this stage we have yet to consider what type of antenna to use. This subject alone can fill your library with books. As a starting point, I suggest reading Ron Bertrand's article 'Understanding and building the OCF dipole antenna', p 15, *Amateur Radio*, Jan/Feb 2009.

Remember, amateur radio is an experimental hobby, so do not be afraid to fiddle. You will be surprised at how learning from practice makes the book learning come alive.

SR

Multimedia computer headset adaptor with PTT for ham rigs

Ben Broadbent VK5BB

What is your choice of microphone for your style of operation? A hand microphone, desk microphone or headset? In my early days (early 1970s) and of course whilst mobile, the handheld microphone was my choice. Even after I acquired my first desk microphone it was not my main choice for operating at my station desk.

Do not know why, maybe it was something with which I was not comfortable? Later with a change in career, I was a technician supporting a major communications centre and here the desk microphone and foot switch PTT ruled! With an upgrade, all operators were moved onto headsets, mainly to reduce noise due to the new open space environment. During this period I also spent some odd time as a relief radio dispatch operator.

I have also operated as a WICEN base communications operator for the Classic Car Rally here in VK5 and supplied my own headset and foot PTT switch on day two, as my PTT fingers were worn out after day one. Oh boy, can those PTT handheld microphone button springs get hard to press when constantly PTTing all day!

As time went by, moving house and shack, raising a family, I was able to continue my hobby playing with amateur radio and the hand microphone still ruled!

Later, with a new rig, well new to me, an Icom IC-756Pro2, I decided that the shack needed a new radio desk and that here I would finally come to realise some order and set myself up in some style.

I dug out my old desk microphone, changed over the insert to suit the Icom rig and I was now sold on the

desk microphone for the station. I also rounded up another desk microphone carcass, rebuilt it and I had a second microphone for my VHF/UHF rig.

It was great for rag chews, flick the PTT into lock and chat away hands free, and be able to write notes into my log (remember them?) and note pad. Comments from the other end were good though there was the occasional comment of QSB on my audio.

Ah, the problem quickly worked out, if I turned away or leaned back from the desk microphone, the audio faded. Solution? A headset with boom microphone of course!

I looked into my junk box, dragged out some old headset bits and looked them over. Sure I could rebuild something into a workable headset and adapt it to the radios.

Looking around at my laptop computer, I took a long look at the multimedia headset that I used to record the odd segment for the VK1WIA broadcast and the like. It was nothing that special, a light weight headset with a neat flexible boom microphone that I liked. The audio from the microphone was quite good to my ears and I plugged the speakers into my rig and listened to receive audio on 80 and 40 metres. It was very acceptable and comfortable to me.

OK, now I needed to make up an adaptor interface with PTT operation to connect the headset to my rigs.

The headset I had was one I picked up for about \$20.00 at one of the large retail stores, and it had two 3.5 mm plugs, one for the microphone and one for the headset speakers. Thinking about its configuration

and how it operates into a computer sound card, I made the assumption that it was an electret insert, with the computer supplying the bias voltage. Checking my rig microphone circuits, yes there was bias voltage available and yes it appeared Murphy was off on holidays and my idea might just work!

The end result is illustrated in the attached circuit, drawings and notes. The microphone plug wiring is to suit the eight pin plug for Icom radios, but if you have another make, it should not be too hard to change the wiring to suit your rig.

I strongly recommend that you consult your rig's hand book for the microphone plug wiring and also check the circuit diagram of the handheld microphone just to confirm that the circuit here is similar.

I cheated here; I did not design my circuit from scratch, I used the one as

given in my manual. Why do it the hard way, when the circuit is already worked out, especially if you get good or reasonable reports on your audio quality?

I am right handed and I designed my

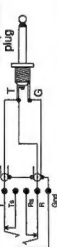
adaptor to be operated under my left hand and positioned to the left of my operating position, log book and note pad. With the box lid as the base, it gives a clean presentation, the plugs and leads to the headset come out on the left hand side and away from directly in front of me.

With my left hand resting on top of the box and my thumb on the PTT switch, for short overs, I just press my thumb down to PTT. For longer overs, my thumb just flicks the PTT switch up into the lock position. When finishing the over, a quick tap down returns the switch to the centre off position. What could be easier?

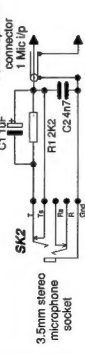
It keeps both hands free, one to write, the other to tune or adjust the rig.

PL1

3.5mm stereo
headphone
socket



To microphone
connector



PTT switch
Centre off,
one side
momentary,
other side
lock



**Note: pin numbers
to suit loom Rigs**

Parts list

- SK1, SK2 3.5mm stereo chassis socket
- SK3 3.5mm mono chassis socket
- R1 2K2 1/4W
- C1 1µF 16V electro
- C2 4.7nF
- SW1 miniature SPDT, mom/centre off/on
- PL1 plug to suit rig headphone socket
- PL2 plug to suit rig microphone socket
- CG1 Cable Grommet strain relief (RG58 BNC Crimp plug boot Jaycar Pt No PM-0648)

Suggested cable:

For mic and PTT, figure '8' twin shielded cable, for headphone, 2 core shielded cable. Length approx 600mm or to suit user.

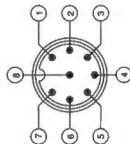
CG1

Cable grommet strain relief (CG1) fitted in hole to suit last groove, approx 8mm dia. Fit cables through strain relief and secure with a small cable tie and pull back into the rubber inside the box.

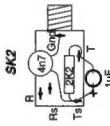
Suggested component layout within jiffy box. View with lid off. When assembled, lid forms base and fitted with small adhesive rubber feet just in from screws. This layout will suit for left handed operation.

SW1 - PTT switch. Fitted so that in normal operation, press down for momentary PTT, and lift up for PTT Lock. (momentary position is towards lid)

PL2



8 pin microphone connector rear/solder view. (loom)



Component layout on microphone socket.

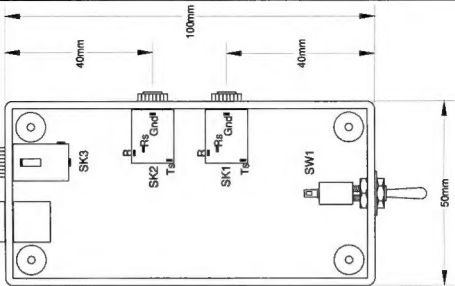


Figure 1: The drawing of the headset adaptor interface.

Switch on your rig's VOX of course! I have also included the option to be able to use a foot switch PTT just in case I want to use the adaptor in a Comcen style of operation or even, contesting. It keeps both hands free, one to write, the other to tune or adjust the rig.

Construction is fairly straight forward and will depend on your selection of components. A little bit of ingenuity will help, but you have to supply that.

Construction tip

Some Jiffy boxes have formed slots inside to hold circuit boards and these can make it difficult to fit the 3.5 mm sockets. You can pare out the ribs forming the slots carefully if you use a sharp 6 mm carpenter's wood chisel. Put the box on edge with the surface with the ribs you want to remove on the bottom and on your work surface.

Rest the rear of the box against a stop, a clamp clamped on the edge of your work surface should be fine. Lay the chisel down flat, chamfered edge up and shave off a thin layer off the top of the ribs. Do not try to take out too much plastic all at once, slowly and carefully is the way to go. You only need to take out the ribs immediately where you need to place the 3.5 mm sockets.

If you want to use the box with your right hand and to keep cables clear of your working area, fit the sockets on the other side of the box, or even fit two extra and wire them in parallel and get the maximum of flexibility for your operation.

If you want to use the adaptor with different rigs that have different microphone plugs, fit a DIN socket in the back in place of the cable grommet and make up different leads to suit the different microphone connectors.

Lead lengths? I found 600 mm was long enough without getting too much lead in the way. You may need longer, depending on your placement preference for the box or where you need to connect to your rig. There are many possibilities to adapt this headset interface to your own personal style of operation.

Have fun.

AR

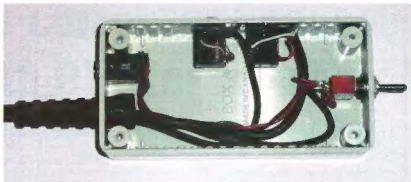


Photo 1: Internal view of the wiring of the headset adaptor interface.



Photo 2: The finished headset adaptor interface.



Photo 3: The headset adaptor in use.

The ultimate multiband dipole

Rick Hill VK6XT

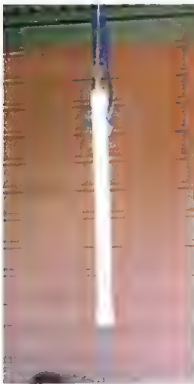


Photo 1: The W2DU balun used on the prototype antenna.

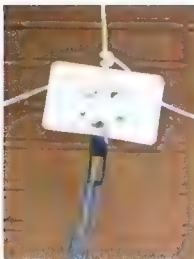


Photo 2: The feedpoint insulator and strain relief.

Introduction

Getting operation on several HF bands from one antenna has been the quest of numerous amateurs for decades. The results of these endeavours have resulted in the development of trap dipoles, Windom or OCF antennas, broadband resistively loaded dipoles and the G5RV, amongst others. The object of the exercise is to obtain operation on as many frequencies as possible with the minimum of complication in the way of antenna 'tuners' or matching units. Since the 1980s the 'game' has changed somewhat, with two additional factors to consider. One of these is the common use of transceivers with solid state finals and the other is the introduction of new bands at 10, 18 and 24 MHz, post WARC79. None of the antennas previously mentioned truly meets all these requirements.

In 1985, Brian Austin ZS6BKW at the time and now G0GSF, published his results for optimising the G5RV using the new-fangled personal computer. This antenna seems to be fairly unknown in VK, as I get a lot of enquiries if I mention that I am using a 'ZS6BKW'. Technically, the antenna has been researched thoroughly – L.B. Cebik W4RNL has written a great article for those who really want to explore the theory. In practice the antenna is very similar to the G5RV, the obvious differences being that it is a little shorter in the flat-top and a little longer in the feedline. The key factor of the design is the impedance-matching functions of the feedline. The original version used an open-wire feedline of 400 ohms nominal impedance. It is quite possible to build the antenna using 450 ohm ribbon or even 300 ohm TV ribbon, as long as the different velocity factors are taken into account.

Practical outcomes

This antenna will operate efficiently on SIX amateur bands without the use of a 'tuner', and with a VSWR

better than 2 to 1, allowing most rigs to operate at full power. These six bands are (parts of) the 40, 20, 17, 12, 10 and 6 metre bands. Using a tuner will allow operation on all bands, 160 metres through to 6 metres, with the possible exception of 30 and 15 metres. It is quite feasible to scale the dimensions of the antenna. Personally, I have scaled it by 0.68 to make a 30/15 metre variant, and also doubled the dimensions to make a great 80/40 metre antenna, albeit with a very long feedline being required.

Downsides

It can be a challenge to 'fit in' the required feedline length if you only have low antenna supports. Wet weather can detune the feeder enough to cause SWR problems in some cases.

Construction and optimisation

My current version of the antenna uses 450 ohm feedline (type no. JSC1318) and heavy-duty stranded PVC-insulated wire for the dipole (50 x 0.25, the equivalent of no.13AWG). I have threaded a nylon 'Whipper snipper' cord through the windows of the feedline and pulled it up tight to give support to the ribbon and as an attempt to stop it flapping in strong winds.

The velocity factor of the feedline can be checked as follows: connect a low power 50 ohm resistor across the end of the feedline, in place of the dipole, and sweep for a sharp dip in SWR using an analyser (or a QRP power source) and a SWR meter. A dip at 11,270 kHz should be evident, indicating an exact half wavelength feedline at that frequency (note well, this is outside the ham bands). A typical feedline length is 11.18 metres for the solid black TV ribbon (it is getting hard to find these days). My feedline shows a velocity factor of 0.923 giving a length of 12.276 metres, compared to the theoretical value of 13.3 metres.

Once the feedline is tuned to frequency, the dipole can be connected and pruned to length. What we are looking for here is best SWR in the middle of the 20 metre band, say at 14.150 MHz. There will be variations in the final length depending on whether the wire is bare or insulated. The final height, and whether erected as a flat top or inverted vee, will also influence the length. Antennas made using 300 ohm ribbon have been found to require a slightly longer wire length, about 14.2 metres per side.

My antenna has 12.276 metres of feeder and 13.5 metres either side in the dipole. The feedline is hung at about 18 metres, and spaced out from my tower about 600 mm. The dipole is slightly 'Vee'd' with the ends about 10 metres off the deck. I personally use a balun at the junction of ribbon to coax although it is entirely optional. You probably should leave it out unless there are signs of RF in the shack. I use a Riesert W1JR style of balun; it is 10 turns of RG58 wound on a ferrite toroid type FT240-61. Previously I used a W2DU type of balun with identical results. It will be noticed that the minimum SWR on the 17 metre and 12 metre bands is actually outside the band, normally a bit lower in frequency. This is a function of the design and cannot be corrected by length adjustment, the important thing

being that the SWR is useably low on the ham frequencies.

On air

The antenna performs as well as anything else of similar size and height and better than anything else in this price range! When used on 80 metres it will be found to be only a tad down on a full-size dipole. On 6 metres, I was very surprised to be able to work another station about 150 km away on SSB. DX performance is quite similar to the GSRV. I find that I can work plenty of DX using digital modes when the bands are open but you cannot expect too much in the kilowatt alley of 20 metres SSB. The theoretical radiation pattern is essentially similar to the GSRV; omni-directional on 80 metres, possibly favouring broadside on 40 and 20 metres and a multi-lobed pattern on the higher frequencies.

In conclusion, if I could have only one antenna, this would be it. It is probably worth the effort to make

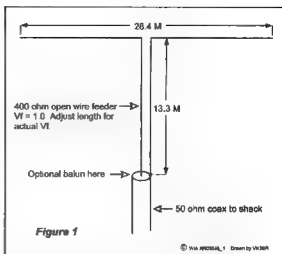


Figure 1: Diagram of the ZS6BKW dipole.

up some open-wire feeder of about 400 ohms Z_o , for the best mechanical durability of the antenna.

Things to try

It should be possible to bring the legs of the antenna forward into a horizontal vee, making it into a V beam. With the internal angle between the dipole at about 75 degrees, the two main lobes of the azimuth pattern will combine as one on the high bands to give a bidirectional pattern with about 5 dB gain over a dipole.

Big releases for Vertex Standard

Vertex Standard has indicated some exciting times ahead for amateurs interested in both the HF and VHF/UHF bands.

This is with the imminent release in Australia of the FTM-350R dual band VHF/UHF transceiver, to be followed shortly thereafter by a major offering in the HF/50 MHz arena, the FT DX 5000MP, which is designed to fit between their high end FTDX 9000 series transceivers and the popular FT-2000 series.

The FTM-350R is ready for release in VK now, and may possibly be available through the Yaesu dealer network by the time you read this.

Features of the FTM-350R include a large LCD display with eight colour options, a multi-purpose global positioning system display, a huge memory channel management capability including 500 independent memory channels, a dual band AF monitor for FM/AM broadcast monitoring and an easily separated display control head allowing separation from the main RF power unit.

It is APRS* compatible, has dual built-in speakers on the rear of the control head for easy FM broadcast listening and has a built-in barometric pressure sensor.

The FT DX 5000MP may still be a few weeks away, but news of its coming will be advised in May AR. Well worth waiting for, I suggest!



Part 3 WW1 and closure

An Arena of Wonder – QSP

Peter Wolfenden VK3RV

The history of amateur radio in Australia continues. Chapters one to six of this series have been published in the previous two issues of *Amateur Radio magazine*.

7 World War I and closure

Extract from the log of Arthur Cotton XVS (later ASHY). See Figure 1.

The advent of WWI caused the closure of all experimental stations in Australia from August 1914. The committee of the Wireless Institute of Victoria received from Mr Balsillie, the Commonwealth Wireless Director, a request for competent operators "...to be called upon when required" (1).

All Australian experimenters received instructions from the Post Master General's Department to dismantle aerials, gear and appliances within 24 hours and to lodge their equipment at the local Post Office. See Figure 2.

The Navy resumed control of the radio spectrum in March 1916. About five months later all aspects of Shaw Wireless Ltd were purchased by the Government for the use of the Navy. The repercussions of this were massive, ending up as a Royal Commission on Navy and Defence Administration in 1919 (2). Newspaper headlines screamed "NAVY SCANDAL" as the story started to unfold in the House of Representatives (3).

During the war, many experimenters enlisted and as a result most "radio" clubs and societies either closed down or became moribund. The war desperately needed wireless operators, indeed anyone with Morse code proficiency was snapped up by the services. Wireless, like aviation, was a new science lacking a reservoir of competent operators,

August 4th 1914
War! Here's a mess! War
declared - orders to hand from P.M.G.
dept to dismantle aerials, gear and
appliances within 24 hours & notify
Deputy P.M.G. Rat instructions carried out.

Figure 1: An extract from the log of ASHY, 4 August, 1914, noting war declared (VK5CTY).

VICTORIA,
POSTMASTER-GENERAL'S DEPARTMENT,
GENERAL POST OFFICE,
MELBOURNE. 3rd August 1914

RECORDED IN _____
If any further correspondence on this subject the above number should be quoted.

Sir,

Under the powers conferred upon the Postmaster-General in the Wireless Telegraphy Act of 1906 and the Regulations thereunder you are hereby instructed to dismantle and disconnect all radiotelegraph aerials, gear and appliances at your address within 24 hours of the receipt of this notice and directly this has been done send an intimation by letter to the Deputy Postmaster-General, Melbourne, notifying that this instruction has been complied with.

Yours faithfully,
Impson
Acting Deputy Postmaster-General.

Figure 2: A copy of the PMG's "closure letter", 3 August, 1914.

consequently many adventurous teenagers put up their age to enable them to enlist in a bid to break away

from boredom at home!

At the August 1914 meeting of the

WIV "It was decided to hold together as an institute to ensure the return for apparatus and right to experiment further after war trouble was over" and "that the institute offer its services to the Defence Department for any duty the department might consider its various members capable of performing."

There are also reports that some experimenters loaned or donated their equipment to the Navy or other government department. Walter Witt's (XKW) Ford spark-coil transmitter was used for short range communications between ships at sea and Victor Nightingall's (XKK) aerial mast - all 47.5 m (156 feet) of it was donated to the Postmaster General's Department, "to be removed at the Department's expense and in

accordance with the demands of the Department of Defence"! (4, 5) See Figure 3.

8 Trying to get back "on the air"

Although Armistice was signed on 11 November, 1918, the control of the spectrum in the UK, USA and Australia was jealously retained by the respective Navies. The USA led the way back to "normality" and then only after the Director of Naval Communication Service under much pressure from Congress removed all restrictions in September, 1919. UK and Australia followed, however many restrictions remained in force for some years (6, 7, 8).

In Australia, the Navy was very reluctant to relinquish control. Amateur experimenters and commercial interests alike became frustrated by the prolonged delay and, during 1919, Ernest Fisk, Managing Director of Amalgamated Wireless, Australasia, became involved with the WIA (NSW) and was pro-active in having the spectrum re-opened to the experimenters. At this distance, it is unclear as to exactly what were his real motives. Perhaps we should accept that his efforts were intended for the betterment of experimenters generally, but we should also bear in mind that he was foremost a company man, very much involved with the commercial aspects of wireless and keen to expand his business activities. He was a "centre stage" player and regaining access to the spectrum would have been foremost on his mind!

Just prior to the formation of the South Australian Section of the WIA in September, 1919, Sea, Land and Air magazine reported: "Wireless Institutes are now being formed in all the Australian States, and when they are completed it is expected that they will be linked into one Commonwealth organisation, in order to work for the common benefit of all experimenters and private users of wireless apparatus" (9).

The claim that "Wireless Institutes were now being formed..." seems to imply that there were no earlier Institutes, although in many instances, office bearers of pre-WWI Institutes continued in office bearing positions during the post-WWI

restructure. Hyperbole surrounded many reports of activities in the numerous radio journals appearing during the years after WWI. Reading these magazines today leaves an impression of a deal of 'manipulation' of people, organisations and events by those in a hurry to make change!

Prior to the Navy issuing receiving licences after the war, many experimenters quietly rebuilt their stations and commenced tuning into the ether again. One was Arthur Cotton of Adelaide, XVS prior to the war. He felt that the government owed him the unused portion (173 days) of his paid up pre-WWI licence.



Figure 4: Arthur Cotton A5HY, circa 1927.

In August, 1919 he wrote to the PMG about the situation; but nothing was heard until 29 January, 1920! Quoting from Arthur's log book, the reply stated that his letter "...was referred to the Naval Department which had given it much consideration and decided to give me pro rata credit for the unexpired portion of my licence issued pre war (not so bad), but it will be allowed not now, but when the new regulations permit renewal" (10).

Arthur pressed on with re-establishing his station - "...I have, however received my junk back from quarantine [the local post office] and have erected a nice new mast and aerial and enjoyed a fortnight's good fun on 600 metre reception when I had a visit from a Naval Officer (Square rig and brass buttons)! He reminds [me] of the fact that I



Figure 3: Victor Nightingall's mast and aerial was donated to the Post Master General's Department! Their removal problem! (Nightingall File, WIAA)

must QRT until a proper permit is forthcoming (much good exercise hauling aerial up at nights)."

Then "...After a long wait, the 9th of June brings a letter stating that my temporary permit, No. 210 is withdrawn and if I take out a new licence, it will be extended 173 days but if a new licence is not taken - nothing doing. Also, a remittance of £2-0-0 must accompany an application. This was done and a licence was duly received to listen only - Non-regenerative" (10). The licensing situation was starting to move. The Navy commenced issuing temporary receive only licences from November, 1919; now further pressure was being placed on the authorities to make available transmitting licences.

During November, 1920, the South Australian Division was so concerned about "valve licences" being made available to incompetent persons that they decided to approach the authorities over the matter! Early valve receivers, if incorrectly operated, could radiate and cause interference (9). The Victorian Division contacted other states requesting them to agree to appoint

proxies from within the Victorian Council (of the Institute) to represent them on a possible Federal Council which itself was to approach authorities to re-issue transmitting licences and obtain due recognition of a Federal WIA (6, 9).

Most wartime restrictions were removed by the Government in late 1920 and the PMG regained control of examinations. But transmitting licences were not generally made available until late 1922. EW Cole (Book Arcade) Publisher produced Wireless Telegraphy in 1920, a small handbook which provided guidance to potential commercial and amateur wireless operators wishing to study for the new examinations. The text covered the Marconi, Telefunken and the Australian Balsillie wireless systems together with general theory (11).

The new Controller of Wireless was Jim Malone. He was generally sympathetic to experimenters and issued a number of special transmitting licences "ahead of time". One was for the Wireless Institute (Vic), which from May, 1921 was granted permission to transmit nightly from rooms which the

Institute had taken at the Arcade Hall in Chapel Street, Prahran (6, 12).



Figure 5: James Malone (WIAA).

Another example is the South Australian Institute being allowed to establish an experimental wireless telegraph station at the residence of its Honorary Secretary, Clement Ames in Torrensview. The station operated from September, 1921, initially under

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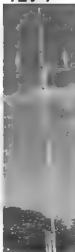
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TEV-3

TEV-3 WARC



Antenna	TEV-4	TEV-3	TEV-3 WARC
FREQUENCY	7, 14, 21, 28 MHz	14, 21, 28 MHz	10, 15, 24 MHz
ELEMENT HEIGHT	4090 mm	3800 mm	5025 mm
FEED IMPEDANCE	50 ohm	50 ohm	50 ohm
Max. RADIAL LENGTH	10.7 metres	5 metres	7.5 metres
SWR	1.5 or less	1.5 or less	1.5 or less
POWER RATING	1 kW	1 kW	1 kW

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2 m 13 ele 6 m boom H/Yagi	\$245

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the call sign 5S19 changing later to 5AV. It is understood that there were a few others (13).

It is appropriate to record here, that over the years, the relationship between the PMG (their predecessors and their successors) and the WIA appears to have been amicable and professional.

Perhaps in the past, this was because radio men were dealing with radio men who understood the technical ramifications of a decision, but we should not forget that the authority also wanted to deal with one experimental/amateur voice and the WIA finally gave them that single voice. There were of course differences of opinion and sometimes misunderstandings, but as a general rule, once difficulties or objectives were recognised by each party, a mutual approach usually followed which led to a solution for the problem.

I am particularly referring here to administrative issues – policy or political matters have at times been very hard on experimenters and on occasions caused the WIA to make a public stand in an attempt to seek support and an acceptable outcome. This did not always happen! (14, 15).

By the end of 1921 there were sufficient stations using regenerative receivers that interference was being experienced by all users of the spectrum in some parts of the country. The earlier fears of the South Australian Division had been realised!

Because of the interference, newspaper reports in July, 1922 proclaimed that experimenter's licences were in jeopardy. Moves were afoot to secure the cooperation of all Divisions in the protection of experimenter's rights.

A reduction in the abnormally high licence fee was again sought and in August, 1922 the SA Division sent a letter to the Prime Minister about the status of amateur experimenters. At that time the PM's department was responsible for overall spectrum management via Jim Malone, Controller of Wireless for the Commonwealth. In reply the Division was advised that "the question of federal control is being considered by Federal Parliament"; it was obvious that major changes were at hand (6, 16).

The hiatus in making transmitting licences readily available generated a deal of impatience on the

part of potential amateur experimenters and those wishing to open up the commercial possibilities of wireless. The only stations receivable by those who had paid for their licences were the coastal stations (recently taken over by AWA), ships at sea, a few land stations including Institute stations, the occasional official telephony experiment and perhaps the odd impatient "pirate"!

A number of "would be" experimenters keyed their oscillating valve receiver, which operated as a low powered transmitter, enabling short range communications – all highly illegal!

The Postmaster General's department was still trying to deal with this issue in 1924 even when it was possible to obtain a transmitting licence! Complaints were made by the Institute to the PMG about

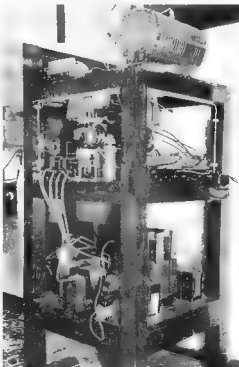


Figure 6: The 2WI station, in 1925.

the unreasonable delays in issuing licences to qualified people "...and as a result a number of unlicensed transmitting stations had been established, or in some cases the licensed receivers were being used in an illegal manner for the purposes of transmitting" (17).

Before we leave this period of our history, it should be mentioned that it was at about this time that lady operators joined the ranks of experimenters.

Initially a fairly "rough start" for those prepared to venture into the all male domain of volts, amps and Hertzian waves. The first report of formal interest was revealed during 1919 when a Miss Rogers made an enquiry about the possibility of joining the South Australian Division. The Institute replied (after consulting with other States), that "This Institute at present is unable to admit lady members" (9). Was this one of the reasons for the VKs rapidly changing their minds in December, 1919 to drop the constitution drafted in NSW in favour of their own?

Florence Wallace (later McKenzie) is the first known licensed lady amateur in Australia. A qualified electrical engineer, she operated a wireless/electrical shop in the heart of Sydney from 1921 (13). In a 1927 call sign list, she is shown as VK2GA. Florence was a very active and respected lady operator, who was involved with establishing Wireless Weekly magazine in August, 1922.

Florence, or "Mrs Mac", established the WESC (Women's Emergency Signal Corps) which provided a no-charge Morse code training facility. From this grew the WRANS, the Women's Royal Australian Navy. "Mrs Mac" trained many! From this time on, the number of lady operators grew; many however, remained behind the anonymity of Morse code operation!

Today, Australia has many lady operators using all modes and operating on most bands, they are supported by their organisation ALARA (Australian Ladies Amateur Radio Association), formed in 1975, which is affiliated with the WIA.



Figure 7: Florence Wallace (later McKenzie) (Australasian Wireless Review January, 1923).

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Software Defined Radio

- a look at the Flex-3000.

Brian Morgan VK7RR

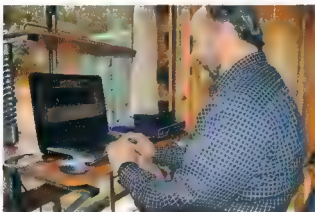


Photo 1: Brian VK7RR at his portable operating desk, the laptop in the foreground and the SDR Flex-3000 on the right.

Do you remember your first foray into radio? I certainly remember mine. My boyhood was spent building crystal sets, then graduating to a one valve regenerative receiver, then two valves and then, one day, a two transistor radio built on a masonite board. I thought all my Christmases had come at once with its performance so much better than the valve radios.

The next fifty plus years have kept me interested in the ever changing challenges of amateur radio. Yes, I have progressed through surplus military receivers, 10 valve home built receivers with the then innovative product detectors which made copying SSB so much easier, to Yaesu, Icom and Kenwood transceivers, all the while



Photo 3: A photo of the complete station, with the 10 + 10 watt external audio amplifier (referred to in the text) sitting on top of the Flex-3000.

being distracted by building or repairing repeaters or some home brew project or another.

Three years ago I was exposed to the new concept of a software defined radio, one which defied almost all of the then accepted conventions and did not even have a tuning knob. I was intrigued and could not wait to purchase the Flex-5000 radio and then, early in 2009, the Flex-3000.

This is not intended to be a technical article but a practical description of a new concept in transceivers.

My shack still has a Yaesu FT-1000MP Mark 5 sitting on the bench but it no longer even has an antenna attached to it, so taken have I been with the Flex radio.

The 5000 has become my home station and the 3000 is compact enough to be taken portable as you can see. And yes, that is snow outside the window.

The Flex-3000 and my laptop both sit inside a traditional laptop bag. It is slightly bigger and a little heavier than the laptop, weighing in at four kgs.

The radio puts out 100 watts on all HF bands and six metres. The power can be varied manually for each band, by a very accurate drive control but can also be adjusted by software, so as to drive linear amplifiers and so on, at different drive levels. It does not have

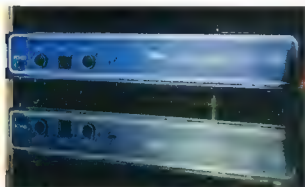


Photo 4: A discrete photograph of the radio on a reflective surface.

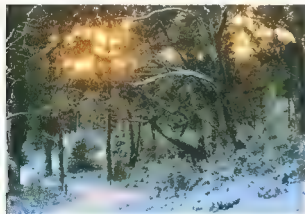


Photo 5: A view of one of the hardships the author has to endure when playing amateur radio in the highlands of Tasmania.



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conventional ALC, but then again, if you set it up correctly, it does not need it

The software defined radio, as its name implies, is as much to do with computer operating as it is to do with sitting by a ham rig. It does not require any more knowledge of computers than operating Windows XP.

The basic radio comes with Power SDR, the software which gives you a transceiver like appearance on your computer screen and which provides for all the functions we would expect in a conventional transceiver.

With additional software, some of which is obtainable free of cost and some of which requires a nominal payment, it is a simple matter to set up operating on all digital modes, including, RTTY, Packet, PSK31, SSTV and so on. No external devices, such as a modem, are necessary as all connections are done electronically through the use of this software.

Let me explain what I mean. In a conventional radio, if we want to run in digital mode, we have to run cables from our radio to a decoder/encoder or, these days, to the soundcard of our computer. In the

case of my Yaesu, this required about a dozen different cables, some to take audio to and from the radio, one to enable the radio to be tuned via the computer (CAT), one to key the radio for RTTY, another to key it for CW and I have probably forgotten several.

With the Flex, there is one cable, that being a common old garden variety firewire cable. Whilst not as well known as a USB cable, most modern computers have a firewire connection. This permits higher speed data exchange between the computer and the radio than one can achieve with USB2. No other cables are needed. We do not use the sound card in the computer because all processing is done digitally thus limiting the risk of introducing unnecessary distortion. By comparison, most of the processing in my Yaesu station was done in analogue.

The difference is immediately noticeable in weak signal conditions, where you are competing with the noise, so that a Software Defined Radio will decode PSK signals which are below the audible level.

If you have ever used a computer for station operation you will have

encountered the problem of trying to have several programs interact from one serial port of the computer. These days we are lucky if our computer has even one serial port, much less more than one and I have had a great deal of trouble using USB to serial adapters.

A comport (which is the connection to the computer via the serial or USB port) can only talk to one device at a time, so that if you want the computer to control your radio, antenna and perhaps rotator all at once, some other process needs to be used, to avoid a comport conflict where the first program to be engaged hogs the comport and prevents its use for any other process. In the bad old days I would find myself forgetting that I had a program open, then open, say, a logging program and then have the computer disable that program's CAT feature because it was already in use.

Because we are talking about a software defined radio, we can use software to achieve this. First, there is a free program (DDUtil), written by Steve Nance K3FR which works hand in hand with another program ComCom which simulates pairing of comport from real ones to virtual comport.

With these two programs you can load and run a logging program, a digital decoding program and a rig controller all at the same time, and again, without needing any leads. It is all done in software.

Connecting audio between the radio and the digital programs is also done in software using a paid program (NTONYX) which provides a virtual audio connection between them.

In my home station, I was running a 4 element SteppIR until high winds earlier this year re-shaped the driven element. I am still waiting for SteppIR to provide the promised replacements. However, that is another story.

The SteppIR is designed to follow band change commands automatically, and also, within the band, it will adjust the element lengths as you tune up and down the band.

My rotator is an Alphaspid which is also designed to integrate into the CAT commands coming from



Photo 2: A screen shot of the Flex-3000 at work, in SSB mode, on 40 metres. The strong signal in the centre was the station to which I was tuned at that time.

the computer, so that my logging program will tell it the short or long path bearing of the station I wish to work, and without touching a button, the antenna as if by magic turns in that direction. All of these functions occur without any conflicts, through the use of the software outlined above.

There is of course a cable to the rotator and the SteppiR controller, but we can't have everything!

At my weekend in the central highlands of Tasmania, I have one antenna at present, a full wave loop on 80 metres. The Flex 3000 has a built in ATU which, so far, I have found will present me with a satisfactory match on all HF bands. I am sitting here writing this article on the computer which is also driving the radio, whilst I listen to a busy Saturday afternoon of activity on 40 metres. Boy the ZL's are strong today.

The one feature which most struck me by the demonstration of the Flex radio was its narrow band performance. It is quite amazing to reduce the receiver pass band on CW to, say, 100 Hz and be able to read the other station without any of the ringing that we have come to expect with narrow crystal filters. With a Flex radio, there are also no more filters to buy; they are all on board, in the form of software.

The other features, which I have now come to treat as a must, are the panadaptor and the waterfall. These give you a digital picture of the segment of the band that you are tuned to. I have found on a number of occasions that six metre beacons, which are too weak to read, can be seen on the waterfall. Indeed, as the MUF increases, you can sit and watch as these signals climb above the noise floor until ultimately the human ear can start to read them.

You no longer have to sit tuning up and down the bottom part of six. All you need do is cast an occasional look at the computer screen and this will tell you what the band is doing.

And if you are using digital modes, with the Flex-5000 or 3000, centre the cursor over a station showing on the panadaptor, click on the right mouse button and then left click and you are tuned to that station.

I have experimented with MixW and TRX-Manager, to name the two that I have most used, as rig control programs, which also allow me to keep a digital log. There are a number of others, including Ham Radio Deluxe. At the end of the day, I think it comes down to personal choice. Each of these programs has certain features that the others don't have. In my case I have cheated a little as I have added several features which

you can load and run a logging program, a digital decoding program and a rig controller all at the same time, and again, without needing any leads. It is all done in software.

allow me to do additional functions in the program of my choice.

Now to the Flex-3000 itself. On the front it has an illuminated, in blue, on/off switch, a 5 mm socket for a CW key, a ubiquitous RJ45 for the mike, and a 5 mm socket for headphones.

On the back are the antenna input BNC connector and controls for external PTT, such as a footswitch, a logic out for switching a linear, line level out for audio to external amplified speakers and the flex wire cable from the computer. A robust four pin connection for 13.8 volts at 25 amps completes the layout.

The Flex 3000 does not have multiple antenna sockets, whereas the Flex 5000 does. I do not see this as a disadvantage because the radio is intended to be used as a portable rig so that external connections are necessarily kept to a minimum.

In the shack, I found it useful to build a dual channel 10 watt audio amplifier which is in a box painted, as close as I could find, to the distinctive blue of the Flex-3000. I prefer using large

speakers in enclosures to powered computer speakers in plastic containers.

The excellent received and transmitted audio from the Flex radios has frequently been commented on by people exposed to them for the first time. On SSB, the audio can be shaped by a graphic equalizer which can adjust transmit and receive audio to your own preference.

And as if that is not enough, because this rig is set up to operate via a computer, if you are connected to the Internet at each end, you are able to operate it remotely. Band change is by the flick of the mouse, tuning is by the scroll wheel, audio gain is again by the flick of the mouse and transmit and receive audio are, in my case, carried via Skype. The two computers are linked by TIGHT VNC, a very simple program to set up.

With a Flex radio this process is just so simple and would be used between my home and my weekend, if only we had broadband there!

In conclusion, my experience with the big brother, the Flex-5000 left me wanting its younger sibling and mine was in the first batch ordered. I received it about a month ago and have been extremely happy with it to date. I am still in the learning phase, but set up probably had me on the air within an hour of unpacking. And that also required me to make up an adapter for my headset to fit the RJ45.

If you are thinking of changing rigs then these are excellent value for money. Indeed, I would have to say that by comparison with the Big Three, in my humble opinion, the receiver on the Flex-5000 is the best that I have used. It is too early to make any definitive comments on the Flex-3000 but it has some very unusual features, as it started to snow outside whilst my XYL was taking the photos for this article. That is a feature that I have not seen mentioned in the detailed instruction manual!

Photos 1, 2, 3 and 5 by Sue Morgan VK7KSU; Photo 4 by the author.

Tall trees from little acorns grow

- or the value of a technical education!

Peter Wolfenden VK3RV

For much of the last century, an education at a local technical school was considered by many to be very beneficial for a worth-while career.

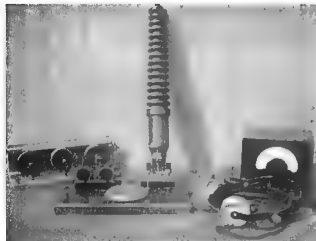


Figure 1: Detectors and acoustic amplifier, Stawell.



Figure 2: Lead-in insulator and helix, circa 1916.

Communities even banded together to finance the construction of technical schools such as in Prahran, Melbourne where the local Mechanics Institute, itself a place of informal education, saw fit to construct, at its own cost, a substantial technical school – Prahran “Tech”. When completed, the Institute handed the school over to the State Minister for Education on a “peppercorn rental” for the purposes of technical education within the municipality (1).

Many leaders of industry and commerce received their formal education at such institutions. Indeed, often those involved with industry and some professions gave freely of their time to help run organisations such as Mechanics Institutes and local Schools of Mines.

The Stawell School of Mines (later the Technical School), obviously unknowingly at the time, played an important part in Australia's early wireless history.

About 1915, a young Albert Horbury took up a teaching position at the school where he luckily had access to many workshop facilities essential to make early wireless equipment.

But this story starts some years before Albert took up the teaching job at Stawell. According to the Argus newspaper, he had been experimenting with wireless in Ironbark (Bendigo, Victoria) since about 1909 when he was only 14 years old! Albert successfully received messages from ships outside of the Port Phillip Bay Heads, a distance of about 200 km, and by the age of 18 had taught another lad from Bendigo sufficient to allow them to communicate across the town. Much of his equipment was home-made including storage batteries made from large jam and preserving jars more than likely to his mother's disgust! By 1914 Albert was formally licensed as XLC and is included in the WIA 1914 Call Book. The address given is simply “Bendigo” (2, 3).

1916 saw a new student at the Stawell Technical School, indeed a lad who was destined to contribute to the Australian fabric in many ways over his working years, including a major part in Civil Aviation.

Ivan Hodder was the keen student and it did not take long for him to discover that Mr Horbury had an interest in wireless. Ivan asked if he would teach him something about wireless telegraphy. However, it took some time before Albert agreed to do so and then only after young Ivan rounded up sufficient students to run a wireless class.

Eight of his mates from the local Boy Scout troop were ‘enlisted’ and the teacher then put a proposal to the school's Principal to run a wireless class at no cost to the school. The school however, charged the students

10/- (\$1.00) per term for Albert Horbury's expertise – but first official permission had to be sought by the school!

The wireless spectrum and wireless itself was highly controlled and regulated by the Navy during and after WWI and it was necessary for the Principal to obtain permission from the Navy to run the instruction classes in wireless theory and practical knowledge of wireless equipment. The school's request was approved by Commodore Cresswell, the man in charge of the RAN Radio Service.

By the end of 1916, Albert Horbury felt that his class had enough theoretical knowledge to proceed to the next stage – the practical application of the 'science'. Some simple experiments were conducted and with the aid of the school's workshop facilities, tuners, loose couplers and a variometer were made.

Transmitter items followed a little later; key components being a high voltage lead-in insulator, a large transmitter helix or coil and a high voltage "tank" capacitor made from sandwiched sheets of zinc and photographic glass plates acting as the dielectric. A smaller version of the station was made for portable operations. This was often loaded onto a buggy and at weekends taken a few miles out into the bush where two way communications with the "base station" were made. According to Ivan, the construction of all of the components and equipment was achieved in about one year!

See Figures 1, 2, and 3.

Moving forward a few years, Stawell Technical School student Ivan Hodder later qualified as a maritime wireless operator and went to sea. In 1924 he applied for a studio technician's position with 3LO broadcasting station in Melbourne, when it was still a commercial station. 3LO was partly owned by retail store Buckley and Nunn who enticed Ivan away from the studio job to operate its radio sales department.

The return to amateur radio took place in about 1930 when Ivan obtained VK3RH and operated from a farming property, Riachella near

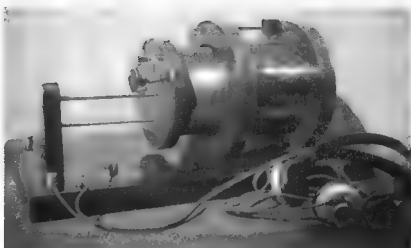


Figure 3: Loose coupler and crystal receiver.

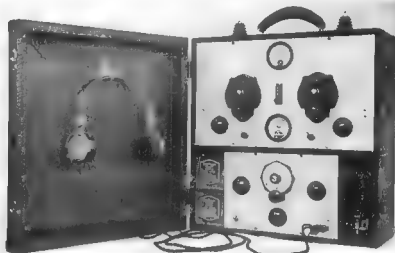


Figure 4: 1934 bushfire transceiver with four watts output.

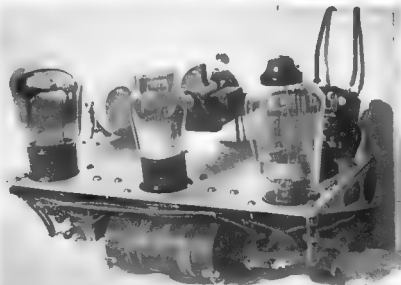


Figure 5: Rear view of the 1934 receiver

Stawell. He joined the WIA and was elected to the VK3 Council as the Country Representative. Later he became a Vice President of the Victorian Division (4).

During 1934 Ivan built a transceiver for the Glenorchy/Riachella Bush Fire Brigade, No 1 Victorian Registered Brigade. The HF transceiver had a four watt, 80 metre, crystal controlled transmitter which could be operated in phone or telegraphy mode. The receiver used a regenerative detector and could receive on 80 or 40 metres; the whole lot operated from a six volt car battery by means of a heavy duty vibrator supply especially manufactured by Eclipse Radio.

This was probably the first two way radio in Victoria, maybe Australia, for bush fire fighting although Ivan recorded that no fires occurred in the two years after it was built! (5)

See Figures 4, 5, 6.

1938 brought a total change for Ivan when he was offered and took up a job as Radio Inspector with the Civil Aviation Branch in August that year. And so began a twenty six year career with Civil Aviation which took him all over the world and involved him in the rapid expansion of international flights and the communication and navigation aids necessary for that expansion.

He was also involved in the setting of standards for flight crew using

radio equipment and later produced the Air Navigation Orders and Flight Radio Operators Manual.

Ivan retired from Civil Aviation in August 1964 when according to him "I had become too old and decrepit to work any longer for the "Guvmint" and received the golden handshake"!

I wonder how many students from Stawell School of Mines benefited from Albert Horbury's enthusiasm for wireless telegraphy and how many "tall trees from those little acorns grew"?

There is a small "twist in the tail" of this story. At the time Ivan was being examined for his Commercial Operators Certificate of Proficiency in 1919 by Lieutenant AF Newman of the RAN (the Navy was still in control of the spectrum at this time), the high results he achieved were remarked on by the examiner.

Ivan then told him of his experiences at the School of Mines in Stawell and later showed him photographs of the equipment constructed by the boys. The Lieutenant was astonished to see the equipment and then proceeded to tell Ivan that it was he who had drafted the letter of permission for the school to conduct the wireless classes issued under the signature of Cmdr. Cresswell.

However, he continued, it was never intended that the permission extended to the construction and operation of any wireless equipment! Lieut. Newman added that if the Navy had become aware of the activities at Stawell during the war, the teacher and students all risked going to gaol! Paradoxically, the signature on Ivan's 1919 Certificate of Proficiency was.... Cmdr. FG Cresswell RAN! (4, 5).

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1. Prahran Mechanics Institute website www.pmi.net.au
2. Argus Newspaper, Melbourne, Youthful Wireless Expert, 7 May 1913, p 5.
3. Wireless in Australia, Wireless Institute of Victoria, 1914.
4. OTN, Journal of the Radio Amateurs Old Timers Association, March 1987, p 8.
5. Ivan Hodder file, WIA Archives

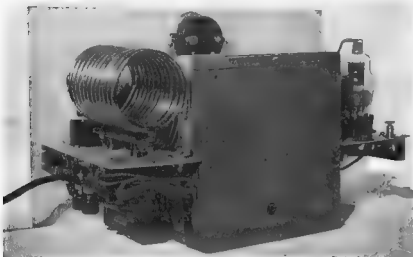


Figure 6: Rear view of the 1934 transmitter.



Figure 7: Ivan Hodder at Stawell, 1918. Note the AIF badge.

Cover story

VK9NA Norfolk Island (RG30xx) VHF/UHF/microwave DXpedition January, 2010

Kevin Johnston VK4UH, Alan Devlin VK3XPD and Michael Coleman

During the first two weeks of the New Year, the VK9NA team operated two portable stations, covering all VHF and microwave bands from 50 MHz through 10 GHz, with DX capability, from Norfolk Island. The aim: to provide contacts from this unique South Pacific location to amateurs in Australia, New Zealand and beyond on the higher frequency bands. The DXpedition was the first planned activity of the WIA Centenary year celebrations. Details of the activity and the results achieved are presented.

Norfolk Island (NI)

Geographically Norfolk Island is a small island in the South Pacific Ocean (29 07'S 167 57'E) located between mainland Australia to the west, New Zealand to the east and New Caledonia to the north. The island has a population of just over 2000 permanent residents and an area of about 35 square kilometres.

Although an Australian Territory, in 1979 Norfolk became self governing and independent from Australia. Children born on Norfolk Island are Australian citizens; however the population of the island are somewhat unique in that they are the only group of Australian residents who are not represented in the Commonwealth Parliament of Australia and who lie outside

of the normal Australian taxation, education, legal and Medicare health care systems. No income tax on Norfolk!

The island is steeped in the history of the early European settlement of Australia, having been first sighted in 1774 by Captain James Cook on his second voyage to the South Pacific. He is said to have named the island after the Duchess of Norfolk and noted that the island was a great source of tall straight trees suitable for ship's masts and flax plants for sail making, both of great importance at that time to the British Royal Navy.

History shows however that both these assumptions

would prove to be false, the wood of the Norfolk Pines proving too brittle as ship's masts and the flax being inferior to that found in New Zealand.

Interestingly the first settlement was established on Norfolk in 1788, the same year as the first settlement in the new Territory of New South Wales – both towns being named "Sydney". Sydney NI was later renamed Kingston.

Between December 1786 and 1813, and then again between 1824 and 1855, the island entered a darker



Michael VK3KH, Alan VK3XPD and Kevin VK4UH with their 1.2 m dish.

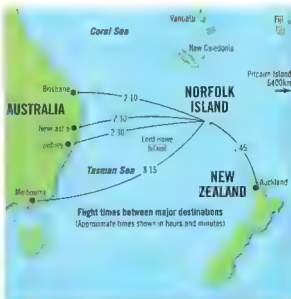


Figure 1: Map with flight time distances to capital cities.

period of its history as a penal colony for British convicts. This period was renowned for its merciless and cruel brutality inflicted upon its inmates.

In 1824 Thomas Brisbane, Governor of New South Wales and Norfolk Island wrote "The felon who is sent there is forever excluded from all hope of return". Norfolk was also known as "a place of the extremest punishment short of death". By 1847 the British Government had closed the penal settlement, the last remaining convicts being transported to Van Diemen's Land VK7.

A year later, 1856, saw the colony rejuvenated with the resettlement

by Pitcairn Islanders, descendants of the Bounty mutineers and their Tahitian partners, after having been pardoned by Queen Victoria and her government. The island became the base for traditional farming and whaling fleets.

During WW2 Norfolk assumed great military significance in the Pacific conflict as a key airbase and refuelling depot between Australia, New Zealand and the Solomon Islands. The Garrison was primarily under the control of the NZ Army.

Today, Norfolk supports a friendly and thriving community of Islanders relying mainly on farming, fishing and tourism for its economy. Most residents hold down three or four jobs. There is no income tax and no council rates, currently only a GST on purchases and a fuel levy. Most residents never lock their cars or houses, everyone is known and crime is almost non-existent. Cars usually only have two or three digits on their registration plates and there is only one roundabout on the whole island.

There being so few surnames amongst the Islanders, the local telephone directory lists most subscribers by their nicknames. There is a hospital providing basic services and air retrieval to the Australian mainland where necessary.

The island has a terrestrial TV service

with most Australian networks available and a local station. There is a wireless 2.4 GHz internet service and a local mobile phone network. Unfortunately the mobile phone network does not support international roaming at the present time. The Norfolk Island airport is equipped for international flights and accommodates moderate sized jet aircraft including the Boeing 737-300.

There is however no natural harbour on the island and only modest loading jetties. Most goods including heavy machinery are brought by sea and craned onto small landing craft for transfer to the shore. The cost of living is expensive since most commodities must be brought from the mainland. Fuel costs \$2.50+ per litre and electricity, generated at the diesel fuelled power station, costs around 65c/kWh.

From an amateur radio perspective

Norfolk Island VK9N is not a rare DX location. Many visiting HF based activities have been undertaken from the island even in recent years. There are also several licensed amateurs resident on the island who are active on HF. Further Norfolk was, until his death in 2009, the home location of Jim Smith VK9NS and his wife Kirsty VK9NL, two of Australia's best known and most highly regarded HF

Table 1: Equipment used by VK9NA.

Base and portable equipment in detail.

Base Station at Shiralee site

Yaesu FT-897D multi-band, all-mode transceiver, 100 watts on 6 m,
TE Systems 1454 linear delivering 360 watts on 2 m
3 element Yagi on 6 m
10 element Yagi on 2 m
6 metre, 3 section guyed mast,
Power – mains supply

Portable station on Mt Pitt

Yaesu FT-817ND 2 m and 70 cm PA driver, running DIGI, SSB and CW modes,
Kenwood TS-2000, alternate/backup all-mode transceiver,
Yaesu FT-817ND as the microwave IF transverter driver.
Laptop Computer for monitoring VK Logger, Hepburn and EchoLink,
Tokyo High Power HL180 PA 2 m linear delivering 180 watts,
Mirage D1010 70 cm linear delivered 120 watts,
1200 mm Prime Focus microwave dish with various microwave feeds,
1296 MHz VK5EME based transverter, 85 watts integrated PA, GPS lockable,
2304 MHz, transverter, 20 watts internal PA or 100 watts with an external PA,
3400 MHz, transverter, DB6NT based, Ionica PA delivering 20 watts,
5760 MHz, transverter, DB6NT based, Codan PA delivering 15 watts,
10368 MHz, transverter, Miteq based, modified Ku NEC 5 watt PA, GPS lockable



Michael VK3KH updating details on the VK Logger watched by Alan VK3XP.

From a VHF/
microwave
perspective....
The island
represents a
unique location, a
new DXCC entity,
a new island
and a rare grid-
square, RG30xx.

operators and DXpeditioners.

From a VHF/microwave perspective, the situation was very different. The island represents a unique location, a new DXCC entity, a new island and a rare grid-square, RG30xx. There were virtually no reports of any VHF activity from the island and no formal records had ever been claimed for contacts from this location.

From the geography of the island it was likely that contacts would be possible from Norfolk, under appropriate conditions, to all Australian and New Zealand call areas on 50 MHz. With good propagation, contacts should also have been possible at 144 MHz to the eastern and southern Australian call areas (1500 km minimum) and to both north and south New Zealand islands (800 km minimum) using moderately powerful stations and appropriate tropospheric and enhanced modes of propagation.

There was also the tantalizing possibility of UHF and microwave across-water paths, under exceptional conditions.

Conversation with a long standing ham resident of the island, John Anderson VK9JA, an ex-radar technician who was stationed on NI in WWII, was very interesting. He described periods where radar reflections were received from the New Zealand coastline and other islands way beyond the normal operating range of the radar, under certain tropospheric conditions.

He also shared his experiences

when, prior to 1975 when the first TV station was established on the island, residents were receiving VHF television signals from mainland Australia, at good signal strengths, during the summer afternoons and evenings.

Planning and preparation

Prior to shipping the equipment to Norfolk, the complete station was tested, on two separate occasions, under portable conditions, to simulate the exact operating scenario expected on the island. All equipment deficiencies and operational issues were identified

and corrected before departure.

At the two portable "testing" locations, firstly at Berwick, south east of Melbourne, and later at Geelong, operating techniques were fine-tuned and valuable experience was gained in the use of digital modes from a portable location. A few days after the Geelong shakedown the team was ready to start packing and shipping the gear.

A preparatory visit to the Island by Michael VK3KH had identified a number of possible operating sites. Few coastal sites however offered unobstructed paths to both VK and



All dish feeds 1.2, 3, 5, 10 GHz with coax feed and alternative 10 GHz waveguide feed for 1.2 m dish.



2.4 GHz "beer-can dish feed"

ZL from a single location. The highest point on the island is Mt. Bates at 319 m above sea level (asl). This site however is in the middle of a national park area with very limited access by foot only.

Alternatively Mt. Pitt on the northern side of the island is at 318 m asl, has road access almost to the summit, a possible operating location and has near 360 degree sea visibility. On the down side, the site is the location of the local television and FM broadcast radio station transmitters, 2.4 GHz WiFi internet network, aviation and other two-way VHF radio transmitters and antennas and also the automatic aircraft searchlight beacon.

The provision of power for portable operation at Mt. Pitt was problematical. Mains power was not available and the use of petrol AC generators would likely not be allowed even for battery charging.

Compounding this problem, neither lead acid batteries nor indeed petrol generators can be carried as air freight. Sulphuric acid is both a corrosion risk and a dangerous oxidizing agent. Residual fuel or oil, if spilled from generators, would pose a fire hazard as would any type of high current battery in the event of a short circuit in transit.

Initially we considered buying car batteries on the island on our arrival, with the intention of leaving them

behind on departure. We contacted a local service station on the island to see if it would be possible to hire batteries for the operation. To our surprise the proprietors of the Central Service Station, showing the amazing generosity typical of the island residents, loaned us a pair of 70 Amp-Hour batteries, free of charge with no deposit or identification being required.

Equipment, antennas and power supplies

The primary aim of the VK9NA activity was operation on the VHF and microwave bands. Limited HF capability was planned for liaison purposes only. Prior to arrival on Norfolk, over 94 kilograms of the heavier and bulkier hardware was air-freighted in advance to the island. The remaining smaller and more fragile gear was carried as checked-in and carry-on luggage on our flights over from Melbourne and Brisbane.

The total equipment pool included transceivers, transverters, power amplifiers, linear amplifiers, power supplies, ATUs, battery chargers, multiple Yagi antennas, two EMDRC portable telescopic antenna masts and a 1200 mm microwave dish antenna with separate feeds for each of the microwave bands.

Also a limited toolkit and all of the necessary mounting hardware, feeders, power leads and interfaces.

Sufficient gear to enable operation on all bands from HF, through 6 metres, 2 metres, 70 cm, 1296 MHz, 2.4 GHz, 3.4 GHz, 5.7 GHz and 10 GHz, with some limited reserve capacity in the event of failures and breakdowns

During the planning stages it was decided to establish two separate operating locations. The first was established at the Shiralee Cottages Accommodation located at the Burnt Pine township. This station was operated on 2 m and 6 m only. The 2 m and 6 m Yagi antennas were erected on the first portable mast and left in place for the duration of the trip. With the benefit of a mains electricity supply, prolonged high power was easy to achieve from this station.

The second would be an entirely portable station established at the Mt. Pitt site, running all bands from 2 m up. The 2 m, and 70 cm Yagi antennas and the 1.2 m dish, for the microwave bands, were erected on the second portable mast. Beam heading of the entire antenna system was achieved using "hand-draulic" technology!

Without access to mains or generator power this station, running 200 watts, was powered by necessity entirely from a battery supply. The 12 volt lead-acid batteries were arranged in series to provide a high-current, high-capacity 24 volt supply. A 40 amp, 24 volt to 13.8 volt DC-DC inverter was then used to power the main transceivers, linear amplifiers and ancillary equipment.

Most of the microwave gear, which required 24 volts for operation, was powered direct from the 24 volt supply. The station laptop computer was operated from a small 12 V to 240 volt AC inverter.

Operation from Mt. Pitt was entirely in the open with virtually no natural shade available. A single collapsible card table constituted the entire operating space for the radios and laptop computer. Large plastic refuse bags, sourced on the island, were available to cover the equipment in the event of rain. A borrowed umbrella was pressed into service to allow the laptop screen to be read in direct sunlight.

Road access to Mt. Pitt ended at a



Michael VK3KH operating on Mt Pitt – grabbing all the shade under the umbrella.

locked gateway about fifty metres or so below the summit. The entire station including all of the RF equipment, batteries and transport cases were manhandled up and down the hill at the start and end of each operating session on the hill.

Initially it was planned to recharge the station batteries overnight for the following morning and during the afternoons for operation during the evenings. Prolonged high-power, high duty-cycle operation, particularly when operating data modes JT65a and FSK441 in the morning periods, proved to be very demanding on the battery supply.

By closely monitoring the individual battery voltages in the 24 volt series system, it was apparent that the single set of batteries would only provide power for 2-3 hours of operation. A second set would be required to allow the full 5-6 hours of operation from Mt. Pitt each day. Once again the generosity of the Norfolk Island community was evident and we were loaned a second set of batteries, again free of charge.

Having two complete sets of batteries, it was possible to change over the supply when one set became discharged. The flattened batteries were then recharged in parallel, using a custom set of jump-leads fabricated on the island, connected across the alternator of the hire vehicle running at tick-over at the bottom of Mt. Pitt. All four batteries were then fully charged, using mains power, each afternoon and night at the Shiralee location.

Operation

Operation was undertaken on every day of the activity. The operating schedule was adapted depending on propagation and conditions on the respective bands. In general all activity was from one site only at any one time. Every attempt was made to maximize the opportunity for contacts for both the VK and ZL VHF communities to Norfolk.

Each morning the station was established on the hill at around dawn while mainland VK would still be in darkness. Initially focusing on Meteor Scatter propagation at this time of the morning, using FSK441, it became apparent on many days that tropospheric propagation was starting much earlier than we had expected. Operating modes were changed appropriately to best use the propagation available.

In the middle of the day and during the early afternoon periods, predominant activity was on 50 MHz from the Shiralee Cottage site. Local TVI issues on both 6 m and 2 m limited our activity from this site in the evenings.

In the mid afternoon on most days the Mt. Pitt station was re-established. Every attempt was made to utilize Sporadic E and troposcatter propagation for contacts using JT65a, CW and SSB as each became possible. In the evenings operation was continued until there was no further propagation, well after nightfall on many occasions. Little contingency was in place for our operation in the dark or cold without protection from the elements.

In the morning period, data modes FSK441 or JT65a were attempted first as propagation developed. Were signals

New WIA records set by VK9NA,

January 2010

The amount of excitement and enthusiasm created amongst the VHF community was gratifying. Log-ins to the VK-Logger were at record levels. Many stations in VK and ZL travelled great distances to activate portable stations to attempt contact. The DXpedition completed 408 QSOs on the VHF to microwave bands. 62 grid squares were contacted representing all but VK8 and VK0 Australian call areas.

Table 3: Records set by VK9NA.

50 MHz	VK9NA to VK6JJ	4933.2 km
144 MHz	VK9NA to VK7MO	2404.7 km
432 MHz	VK9NA to VK2BXT	1735.4 km
1296 MHz	VK9NA to VK2DVZ	1513.2 km
2.4 GHz	VK9NA to VK4OX	1500.0 km

Table 2: Summary of QSOs made by VK9NA.

Band/Mode	DXCC	Grid Squares	QSO
6 metres			
Phone	6	60	258
CW	1	1	3
Total	6	61	261
2 metres			
Phone	3	16	96
CW	3	3	4
Digi	2	10	20
Total	8	19	119
70 cm			
Phone	3	5	13
CW	1	1	2
Digi	1	1	1
Total	3	5	16
23 cm			
Phone	3	4	9
CW	1	1	1
Total	3	4	10
13 cm			
Phone	1	1	1
Total	1	1	1
Total	6	62	408

to rise, attempts were then made on CW and eventually SSB as conditions improved. Progression was then made up the frequency bands with individual stations, through each mode as conditions would allow. Simultaneous operation on multiple bands was problematic due to limitations on available power and cross interference due to common IF frequencies, etc.

Problems, failures and breakdowns

It would have been a miracle for any plan to run entirely smoothly. Quite late in the planning for the VK9NA activity, after the air freighting of equipment and our own flights had been arranged, it became apparent that the whole trip was under threat because of insurance issues.

Despite the small size of our activity and the microscopically small risk to the public we found that we were required to have \$10 million Australian Public Liability Insurance in order to operate from Mt. Pitt, which was considered to be within the National Park. The same level of cover required to host an outdoor pop concert!

The cost of providing such insurance, for three individuals, was prohibitive. Eleventh hour intervention by the WIA provided the necessary insurance cover-note for us as Institute members since the activity was sponsored as part of the 100 year Centenary celebrations. The day was saved.

Amazingly all of the heavy equipment and antennas "eventually" arrived on Norfolk intact and undamaged, the dish seemed however to have come via a very circuitous route.

The distribution of broadcast television at the Shiralee Cottages resort defied our complete understanding. At some stage at least the received UHF digital TV signals appeared to be transverted down to somewhere around 60 MHz for distribution around the holiday complex. Consequently some beam headings on the 6 m Yagi on SSB caused the pictures on our own TV to freeze. Amazingly there was never a problem on CW. We decided therefore to restrict our activity on

this band during normal evening viewing hours.

After each daytime operation from the Mt Pitt site, usually in the early afternoon, we would transfer operation to the Shiralee Cottage site. The tethered portable mast, supporting the 2 m and 70 cm Yagis was roped-off and left erected but the 1.2 m dish was usually removed to minimize the chance of wind damage. This was to save time and manpower and to avoid having to erect the Yagis in failing light.

On one perfectly clear afternoon, we fatefully left the dish in place. As bad luck would have it, a sudden squall blew up with high wind and heavy rain - the first in Norfolk for over three months. Our return to the site was met with the realization that the mast had collapsed. With the added wind-loading of the dish, a guy had pulled its peg from the wet ground and the mast had fallen. We suffered extensive damage to both Yagis which had nose-dived into the earth. Unable to fix the antennas on-site in the failing light we transported everything back to the Shiralee Cottages accommodation and carried out repairs until the early hours of the morning. The boom of the 2 m Yagi was straightened using the limited tools and resources at our disposal. A number of nuts and bolts were replaced and the antenna tested on the ground.

The 70 cm Yagi was not as fortunate. The 6 m boom of the antenna was badly bent and was irreparably fractured through a pair of element mounting holes. The only practical solution was to foreshorten the boom to 4 m and accept the loss of the last few elements. The complete antenna system was successfully reinstalled at dawn at the Mt. Pitt site the following morning.

The only electrical failure we suffered was to our mains-powered 24 volt switched-mode "smart" battery charger, which we had been using to recharge our single set of batteries overnight at the residence. As described it became apparent that the current demands of high power data modes would seriously limit our available operating time.

In an attempt to prolong battery life, when the current demand was very

high, we attempted to float charge the batteries on-site by running the smart charger from the 12 V to 240 volt mains inverter, connected across the 12 V supply in the hire vehicle, at the foot of Mt. Pitt.

A long extension main lead brought the 240 volt AC power from the inverter in the vehicle to the smart charger at the operating site. The arrangement appeared to work initially but not for long. The smart charger failed with the spectacular destruction of one of its electrolytic capacitors.

The 240 volt inverter proved not to be a true sine wave type which was the likely cause of the failure. A larger sine-wave inverter may have solved this problem and may be considered in the future.

The acquisition of the second set of loan batteries solved both the power limitation and charging time issues. We were then able to use one set of batteries while the other set was on charge and swap over as necessary.

Homeward bound

Prior to our return to the mainland, some of the hardware, including the VK9NA DXpedition dish antenna, was left behind on Norfolk as a display at the local radio museum run by John VK9JA. Who knows what the future may hold for future activity?

All of the major RF equipment made it back undamaged. The Yagi antennas and masts were repacked in their poly transport tubes, however on return the packing tubes were badly damaged with the pipe end-caps smashed or lost in transit. It could however have been much worse.

All three operators at VK9NA found the experience exciting, rewarding and at times exhausting. Listening to white noise for hours on end, particularly using the DSP noise reduction, which the team nicknamed "The Imaginator", can play tricks with the mind.

While calling "endlessly" into that noise, a lone evening meteor ping would frequently lift three or more voices out of the static, just for a split second, one after the other

Concludes on page 64

An active loop receiving antenna and converter for 136 kHz

Drew Diamond VK3XU

From initial tests and study, it appears that, for urban locations, better results are generally obtained where a loop (ferrite 'loop-stick', or 'frame') antenna is used for receiving LF signals. To allow us to use an ordinary HF receiver, one that covers (say) three or four MHz, the 136 kHz LF band is converted up to 3.136 (or 4.136) MHz.

Apart from positioning, use of the 'main' transmitting antenna offers little discrimination against the usual

galaxy of locally generated noise, whereas a tuned loop can typically be oriented to obtain a worthwhile, and often remarkable, improvement in signal-to-noise ratio (Reference 1).

Because the loop is resonated at the receiving frequency, the natural selectivity of the circuit will significantly attenuate the strength of (possibly problematic) out-of-band signals before they are presented to the converter chip.

Offered are details of a simple, tuned, balanced loop

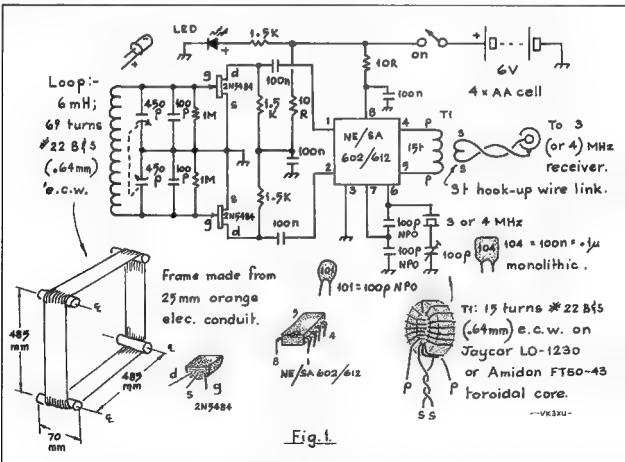


Figure 1: Schematic of the active loop receiving antenna and converter for 136 kHz.

30 AMATEUR RADIO APRIL 2010

rotated hand-over-hand, and thus apply the winding to the frame.

With the winding done, apply a bead of hot-melt glue across the winding in three or four equi-spaced places, around the perimeter of the loop.

The variable tuning capacitor, visible in Photo 3, is a small 450 + 450 pF dual-gang Philips gang salvaged from an old Australian broadcast set. These are fairly common around the swap-meets. Or you could use a similarly ubiquitous Roblan 450 + 450 pF part. It is suggested that your capacitor be fitted so that the spindle emerges at the side of the box, as shown.

The 6 V battery of four AA cells may be accommodated in a holder, such as the Jaycar PH-9204. It can be attached to the lower outside surface of the box with small screws and nuts, or simply fixed there with hot-melt glue. The LED is fitted into the front panel to serve as an 'on' and battery condition indicator.

Operation

Inspect your wiring and soldering for quality and accuracy. Confirm that the FETs and NE602 are correctly fitted, and that your battery of AA cells is properly installed.

Connect the converter output to the receiver input using any reasonable length of 50 ohm coax cable. Tune the receiver to three (or four) MHz, where you should hear the crystal oscillator's signal. Switch on, and adjust the 100 pF trim capacitor so that exactly 3.000 (or 4.000) MHz is generated, thus establishing 'zero frequency'.

Carefully adjust the variable capacitor for a peak in noise/signals. Check that the loop antenna can be peaked at any frequency between about 120 and 230 kHz. The set-up will sound quite lively. Any local noise/interfering signals should be reducible by careful rotation of the loop's plane. A 'feel' for how the loop/converter is working may be obtained by searching for navigation beacons above about 200 kHz.

The loop provides (perhaps surprisingly) good performance indoors. However, at a distance from electric power lines and appliances, a portable receiver/loop combo gives excellent results. For receivers that



Photo 1: The active loop receiving converter in operation

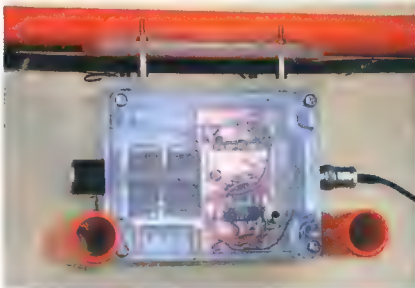


Photo 2: Perspex assembly.

have a DX/local switch (such as the popular Sangean and Degen sets), it should be found that the DX position is seldom required (thus giving better strong-signal handling).

As long as a reasonable separation is maintained between a transmitting antenna and loop, no damage should be caused to the converter or receiver. However, an accidental transmission into the output of the device would probably damage the NE602.

Counter-intuitively, perhaps, the null is through the axis of the loop (that is when the loop is 'broad-side on' - see Reference 1).

The loop must not be allowed to get wet. For permanent use outdoors, therefore, it is suggested that the antenna be housed inside an inverted plastic rubbish-bin, or similar contrivance. Otherwise it may be possible for the converter to be located in a remote out-building if available (where a metal roof does not appear to significantly reduce

Centenary Convention Weekend of Activities

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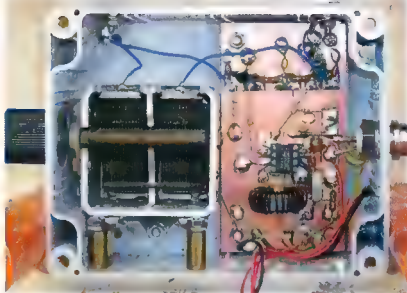


Photo 3: A view of the components mounted on the 'paddyboard' with the box lid removed.

signal levels) and powered through the coax from a 'phantom' battery supply (Ref. 4).

Parts

All the ordinary components are available from our usual parts suppliers, including Altronics, Electronic World, Jaycar, Rockby and Semtronics. Sources for the ABS Box, toroidal core and variable capacitor are mentioned in 'Construction' above.

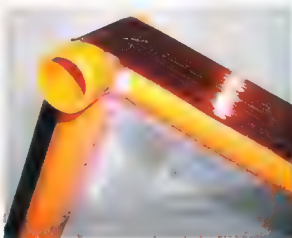


Photo 4: One corner of the loop, showing turns wound side by side upon an 'out-rigger'.

A single length of 25 mm electrical conduit may be purchased from Bunnings or Mitre-10.

Perspex off-cuts are often obtainable, free for the asking, from the scrap-bin of your local plastic sign maker.

I am not in the parts business. Nevertheless, if, after earnest efforts, one or two items remain elusive (like the NE/SE602/612), do 'phone on 03 9722 1620, or post me a line (no e-mails, please), as it may well be that I have spares on hand, or can suggest a source.

References and Further Reading

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100 YEARS

Celebrating the Centenary of
Organised Amateur Radio in Australia

Conference discusses amateur radio emergency communications

Jim Linton VK3PC

The role of radio amateurs assisting in times of natural disasters or other emergencies is well known. This report looks at a recent international gathering of those involved in these activities.

The 5th Global Amateur Radio Emergency Communications Conference (GAREC) hosted by the Japan Amateur Radio League (JARL) and held in Tokyo saw 29 participants from 14 countries share their knowledge and experiences.

JARL President Shozo Hara JA1AN in his opening address mentioned how the re-establishment of amateur radio in Japan in 1952 was soon followed by emergency communications related to a typhoon.

Shozo JA1AN said Japan has many beautiful places by the sea and in the mountains. On the other hand, natural disasters occur due to volcanoes, typhoons and earthquakes.

Looking back to 1995, the huge 'Hanshin-Awaji Earthquake' hit Kobe and neighbouring areas flattening houses, sparking fires and killing more than 6,400. Local radio amateurs supported by the JARL operated emergency communication for a prolonged period.

Shozo JA1AN said since then Japan's radio amateurs have continued to assist in times of disaster. The JARL through its branches has 'cooperation agreements' with local governments and actively participates in emergency communications drills.

GAREC-2009 was held 24-25 August with the theme 'Emergency Communications across Borders' and attended by representatives from Australia, Brunei, Canada, Finland, Japan, Korea, Italy, Hong Kong, Netherlands, New Zealand, South Africa, Thailand, United Kingdom and the USA.

Keep CoA clear in times of need
IARU Region 1 Coordinator for Emergency Communications and the organiser of the twice-yearly GlobalSET, Greg Mossop G0DUB, discussed experiences with the Centre of Activity (CoA) frequencies that were first introduced in 2005.

Three frequencies – 14300, 18160 and 21360 kHz – were chosen to provide intercontinental coverage in times of emergencies and during training exercises in GlobalSET and local simulated emergency tests.

The CoA is not a spot frequency but a starting point, designed for wide area events such as the Indian Ocean tsunami.

While two other CoA, 7060 and 3760 kHz were chosen by IARU Region 1 and subsequently adopted by IARU Region 2, it had always been intended that 80 m and 40 m frequencies be decided on a regional basis.

IARU Region 3 will consider the issue of CoA and while it is likely to adopt the 20 m, 17 m and 15 m band frequencies, a decision is also expected on CoA within its region for 80 m and 40 m.

Emergency communications in action

There was an interesting session on three earthquake disasters. These disasters were the Hanshin-Awaji earthquake in Japan (1995), China's Great Sichuan Earthquake (2008) and Italy's L'Aquila earthquake (2009).

A fourth presentation, 'Bushfire Communications – Australia', gave an insight into the roles of WICEN and RECOM (Red Cross Emergency Communications) during the Black Saturday disaster of February 2009.

The RECOM experience was of particular interest to GAREC attendees from several other countries who are interested in



Jim Linton VK3PC
Chairman IARU Region 3
Disaster Communications Committee

establishing and further developing emergency communications relationships with their Red Cross societies.

Other radio societies are being encouraged to explore the possibility of reaching an agreement of understanding in relation to emergency communications with their local Red Cross.

The IARU and the International Federation of Red Cross and Red Crescent Societies (IFRC) signed a memorandum of understanding (MoU) last year that provides mutual recognition and encouragement for the roles of the Red Cross and the amateur service.

IARU President Tim Ellam VF6SH told GAREC-2009 that the IARU is looking at other non-government organisations that may be suitable for similar MoUs.

The IARU continues to promote the role of amateur radio wherever an

opportunity arises. It is producing a new emergency communications brochure for use to inform the International Telecommunications Union and others about the skills of radio amateurs and their resources in times of need.

The World Radio Conference in 2003 changed the International Radio Regulation Article 25 to better recognise and enhance the ability of amateur radio to prepare for and provide emergency communications.

While those important regulatory changes, including provisions permitting the passing of third party traffic have been included in the local regulations of a number of countries, many are still to do so.

During the conference a variety of reports and experiences were provided, including the following:

Dutch Amateur Radio Emergency Service (DARES), a foundation run by a seven member board, with no members but 'participants' located in 25 regions, that had formal government recognition

Amateur Radio Emergency Service in Hong Kong and the Pearl Delta region, having 200 active members training for the worst to provide local and regional emergency communications

Brunei Darussalam Amateur Radio Association was involved in flash flooding and landslides (January 2009) and due to its activities is now a recognised resource by authorities

HAMNET, the National Emergency Communications division of the South African Radio League (SARL), provides communications for emergencies and works with all non-government organisations

The Japan Amateur Radio Industry Association representative, Kiyoshi Sakurai JA3FMP, talked about the 'predicted catastrophic earthquake' for the Kii Peninsula, on the western Japanese island of Honshu.

An emergency radio plan is ready to help respond to this likely earthquake spot that has scattered communities in mountainous areas.

Kiyoshi JA3FMP, who is also ICOM's Technical Development Department Director, explained how D-STAR repeater sites have been identified to enable that technology combined with GPS to play a role in emergency communications.

In another technology presentation, Bonnie Crystal VR2/KQ6XA provided information on the High Frequency Network that began in June 2007. Its Global Automatic Link Enabled (ALE) system that supports both voice and data, promises to link stations on HF with a 90% reliability 24 hours a day 365 days a year, and may have a great role in emergency communications in the future.

For more information, including the presentations made at this and previous conferences and the official GAREC-2009 statement, they are on the website www.rientola.fi/oh3ag/garec/

Jim Linton VK3PC attended GAREC-2009 to represent the IARU Region 3 as the Chairman of its Disaster Communications Committee and was a member of the conference's program committee.



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We are past the 100 year point and counting down for 2110. Will the hobby as we know it still be about? Only time will tell. Back to the present.

The recent **Central Coast Field Day** had a mild final day of summer at the Wyong racecourse. More than 1300 went through the gates from first light, chasing the bargains offered by the 58 boot sellers until the trading area opened at 0900. Eight candidates sat twenty three assessments provided by the **ARNSW** exam team.

On the Saturday evening 42 attended the Centenary dinner hosted jointly by the **CCARC** and **ARNSW** at the Wyong Bowling Club. The members of the **CCARC** will be thanked for their time and efforts in providing the day for those attending from all parts of VK, ZL and beyond. It will all be on again next February but the date is not known until the racing schedule is announced.

With Easter upon us, it is time to attend the **Urunga Convention**, the longest running Fox Hunt Field Day in Australia, on the mid north coast of VK2. The event is on Easter Saturday and Sunday at the Senior Citizens Hall, Bowra St, Urunga. There is a dinner at the Bowling Club Saturday night and you need to advise if you are attending. Members of **CHADARC** provide the operations. The web site for the convention is www4.tpgi.com.au/goldy2 or contact Ken VK2DGT krgolden46@hotmail.com

Staying on the north coast, Gary VK2ZKT thanks all who attended the January **Radio Expo** sponsored by **MNCARG** in Coffs Harbour and says it will all be on again next January. Check out their web site www.mncarg.org for their range of kits and other good information. Still in the region, it is Port Macquarie in June for the **Oxley Region ARC** annual field day Saturday and Sunday of the long weekend - 12 and 13. Finally to **Summerland ARC**, where they are holding a Foundation

course and assessments April 17 and 18. Their **Northern Rivers WICEN** group has horse enduros 15 & 16 May and again 10 and 11 July.

The **Kurrajong Radio Museum** curated by Ian VK2ZIO is seeking to build up the collection of Australian call books. Ian says the big gap he has is from 1947 to 1976. If you no longer need those old editions, use it as an excuse to visit one weekend. Contact Ian on 02 4573 0601.

A Sydney based club is being formed at North Ryde as the **Macquarie University Amateur Radio Club**. Contact Adam VK2JSI at vk2jsi@muarc.org or by phone 0415 371 990. The University is a centre of excellence in electronics, telecommunications and wireless engineering.

NSW WICEN held their AGM in February and the following State Management Committee was elected: President - Malcolm Alexandra VK2YVA; Senior VP - Crompton Allen VK2HRX; Junior VP - Alan Whitmore VK2DAN; Secretary/Treasurer - Nicholas Fisher VK2ZNF and committee members Julian Sortland VK2YJS, David Sims VK2HSS and Peter Heggie VK2GPH. The Hawkesbury Canoe Classic is over the weekend 23 and 24 October. Web site is www.nsw.wicen.org.au email operations@nsw.wicen.org.au or phone duty operator - 0408 397 217.

Manly Warringah RS recently thought they were about 75 years old and celebrated accordingly. However Richard VK2SKY found a reference to the club providing a demonstration of receiving and playing 'a concert' in Manly - by wireless - from experimental stations across the harbour at Rose Bay and Darling Point. Mr Fisk was in attendance and explained about the new 'wireless' system. That was in 1923 - the year 'broadcasting' started. **MWRS** have upgraded their VK2RMB 8175 UHF repeater and it now supports both analogue and P25 digital modes. The CTCSS access tone has been changed to the new 91.5 Hz and for more details

check out www.mwrs.org.au. The club has announced its first Amateur Radio Licence Youth Grant. The aim of the grant is to attract young enthusiasts to the hobby of amateur radio, to help ensure the future of the hobby and the Manly-Warringah Radio Society.

Applicants can apply for the Grant, then study for their Amateur Radio licence and sit for their assessment at the MWRS club. If they pass the exam, MWRS will fund \$100 towards the cost of the assessments and the ACMA cost for the first year of their amateur radio licence. For the full details check out www.mwrs.org.au

International Marconi Day occurs on 24 April. VK2IMD operation will be provided by **HADARC**. www.hadarc.org.au Use this web site for details of their training and assessments and meetings on the second and fourth Tuesdays at the Mt. Colah Community Centre, Pierre Close, Mt. Colah. It is opposite the eastern entrance and footbridge over Mt. Colah Railway Station. The **Illawarra ARS** meet on the second Tuesday - this month the 13th. www.iars.org.au The **Riverina** region are using repeaters VK2RWG 6750, VK2RTD 6800 and VK2RGF 6850 to provide news coverage at 1000 Sunday and 1930 Tuesday advises John VK2YW President of the **Wagga ARC.. Waverley ARS** will have their annual auction in July. They also hold regular training and assessments. For education inquiries education@vk2bv.org The **Hunter Radio Group** meets on the second Friday at NBN TV studios. Their news net is Monday at 1930 on 3593 kHz and Newcastle and Central Coast repeaters, VK2RNC 6900 & 8025 and VK2RAG 6750.

VK2 had several other Centenary events in the past few weeks. A few gathered at the former Hotel Australia site on 11 March. On Sunday 14 March, ARNSW commissioned their new premises at the VK2WI site. Pictures and stories will appear in a future issue of AR. As part of the celebration ARNSW had made a commemorative plate and mug. These

VK2news continues

are available at events conducted at the Dural site. The March Trash and Treasure was conducted from the new facilities, which meant not having to cart everything out of the old shed for access and searching for the bargains. Donations and SK Estates has kept a good stock level. Thanks for remembering this ARNSW service. The next T&T at the end of May.

This month ARNSW will be holding their AGM on Saturday the 17th at the VK2WI site.

The former email address of vk2wi@ozemail ... has been discontinued. Use office@arnsw.org.au in its place or one of the others addressed in recent notes. At the forthcoming AGM, Brian VK2TOX, the web master for ARNSW, retires. Thanks Brian for your efforts. Ross VK2ER continues the VK2BW1 Morse session on Thursday at 2000 hours on 3550 kHz. Do you like Morse? Can you give him a hand? Call in at the end of the session. Out of broadcast hours there is the automated VK2WI Morse on 3699 kHz.

A new series of identifications graces VK2WI News presentations. The voice is that of John VK2JPM. Now – a request to all amateur operators. Be familiar with the schedules of those providing news bulletins so they can have a clear channel. This is the problem confronting the VK2WI Engineers where after half a century on crystal locked frequencies some are still not aware of the Sunday bulletins. It is the practice of news stations to use a regular time and frequency for these bulletins. Details of all these operations can be found on the WIA web site under "News & Events – Where to Find Us". Also introduced to VK2WI News is an email address for sending call back, beacon and general reports. callbacks@arnsw.org.au

During the summer period Jack VK2XQ provided his usual detailed six metre activity report, compiled on Sunday morning with the very latest news. Jack advised activity has dropped off recently. There may be reports if anything news worthy occurs otherwise the segment will return next summer season. Thanks Jack.

73 – Tim VK2ZTM

VK4news

Christopher Comollattie VK4VCR

Email: qtc@wia.org.au

The year is slowly but surely passing us by, with many projects happening around VK4 – we best keep at them or Christmas will be upon us. And speaking of projects, does your club have anything on the go at the moment?

Clareview

The Clareview event is soon upon us (told you the year is passing us by!) This is an annual migrating event that occurs at Clareview (between Rockhampton and Mackay). Amateur radio operators from near and far travel to this beautiful spot of paradise in Queensland to annoy the locals with their fleet of buses, campervans, caravans, four wheel drives, passenger sedans and not to forget the odd motor bike or two.

You can pick these migrating operators out from the locals, as normally they have a selection of antennas attached to their method of transport. The transport is not only to transport themselves, but also their wives and children and most of importantly of all "the unwanted treasures".

"Unwanted treasures" for the monster auction are like the precious gem of the RF spectrum to an amateur operator. They feel that they need to donate these items of interest (and it does cause quite an interest as you can watch them wandering around the auction table, picking up various items with great curiosity).

But when the auction starts there is no time to relax. Chests are out, vocal cords are cleared and bidding arms are poised ready for action. The bidding begins. Come and watch the spectacular display of the auctioneer as The Migrating Amateur Radio Operators bid hard against each other, dollar for dollar: sorry "High Rollers Only", no fifty cent bids allowed. Bidding can be fast and furious..... And sometimes hmmm, a little slow.

But come and see this event for yourself, proudly organised by the Rockhampton and District Amateur Radio Club along with the Mackay Amateur Radio Club on 1 and 2 May 2010 (Mayday long weekend). On-site accommodation is available in

cabins, caravans or even pitch a tent in the camping ground and enjoy that natural surrounds of the Clareview Beach. More information is available from Don Wilchewski VK4BY on 07 4928 0065.

To book a spot at the Clareview Beach Holiday Park call 07 4956 0190.

Bayside District

Bayside District Amateur Radio Society has a weekly net on 3.567 MHz at 1930 (EST) Wednesday (QRM +2/3 kHz)

Afternoon Net

The newest net in VK4, simply called the AFTERNOON NET, is proving to be a great place to meet up with hams from around the north of the state. It was kicked off by Ray VK4NET along with Len VK4CWM as a net where amateurs from FNQ, NQ and indeed anywhere else can get together for some friendly interaction. Simple guidelines ensure that the net is enjoyable for all who join in.

Many and varied topics are discussed along with the latest happenings around individual's shacks. So, if you are free in the afternoons please check in and say C'Day. There is no set net controller, just who ever wants to do the job on the day.

Bundaberg Amateur Radio Club

IT'S WAR IN THE WIDE BAY... Well not quite, it is just the annual High score Challenge for HARRY ANGEL SPRINT participation.

In April, the adjacent clubs of Bundaberg and Hervey Bay compete for an aged trophy and have a lot of fun in the process so they thought they would share this for anyone looking for ideas to foster some good natured competition and a lot of laughs.

As the Harry Angel Sprint runs for only 106 minutes, it is accessible to young and old and provides the perfect battle ground. The object of our interclub challenge is to encourage Club Member participation in the Sprint. It is NOT a contest for the highest individual score; rather it provides a ratio of how many members with call signs could participate against how many actually do participate.

After they arrive at a ratio or factor for each club they rely on the official point scores published in AR for each call sign. Of course club Secretaries have to be honest and communicate their true 'call sign numbers' at the date of the event and NO ring-ins! Hervey Bay tried that one year and all hell broke loose.

In retaliation BARC tried to 'doctor' the trophy to win years in advance... neither ploy worked. The Interclub BBQ is held in July each year and that is when the Pat Dryden Trophy is awarded to the winning club amidst tales of cheating and score rigging and a lot of good natured ribbing.

To summarise:

Do everything possible to get your members on air and making contacts in the H.A.S. (Bribery does not work but appealing to club pride may be a big stick). Berate your members to send in their scores, a big stick will be necessary at this point.

Take the total number of Club Members you have and discard this number! The important number is how many CALLSIGN members are in each club. Wait for AR to publish results. How many of your club CALLSIGNS participated in H.A.S.?

Divide the total participants by the total number possible to give each club a "Factor". Add up the points for each call sign to arrive at your club total (as published in AR). Multiply the total club point score by the club's Factor. This gives each club a new "Score" – and the highest score WINS.

Hold an interclub get together and accuse the other club of cheating or something. It is essential to laugh and be of good cheer whilst doing all of the above or the 'spirit' of Harry Angel will be lost. If any clubs would like more info on how to run the interclub challenge and some ideas on cheating and rigging, contact the secretary at the Bundaberg Amateur Radio Club at secretary@barc.asn.au

Lady Larcom

Just a brief note of information of a new (currently experimental) repeater at the Volunteer Marine Rescue site at Lady Larcom, a hill some 14 km North of Gladstone. It is operating on 438.675 negative offset with a 123.0 CTCSS tone and the Ident VK4SZ EXP.

Favourable reports have come from Yeppoon and we hope the "Footprint" will reach the town of 1770. Anyone travelling in the Gladstone Region is asked to "give it a go" and report their findings.

It is intended to formalize the Licence Application in the near future with the hope of the call sign VK4RGL. The repeater is a Vertex Standard VXR-9000U on loan from Stuart VK4SZ, currently running 35 W from the diplexer.

The Telewave TPRD-4544 diplexer, Andrews LDF5-50 coax and Antenna Agencies BU3 antenna are on loan from Paul Beales VK4XPB. Rigging work on the 30+ m tower was carried out by Stuart and Michael VK4FMCF, with the antenna mounted on the top Northern Leg.

Many thanks go to VMRG and Jones Communications for their support in this project. Information supplied by Paul Beales VK4XPB 0427 579 271 vk4xpb@wia.org.au

BARC

Brisbane Amateur Radio Club has 28 members, the youngest member in his early 20s and the oldest member is 84. Meetings are at the Queensland Maritime museum at the Eastern end of Southbank on the second Friday of the month, Social meeting on the fourth Friday and Business meetings are followed by a talk.

There is a lighthouse on site and also a lighthouse ship which makes it rather unique club site. How many other radio clubs have a lighthouse at their meeting place? This would make it easy for the Lighthouse weekend.

Committee members are: President Michael Cooper VK4MX, Vice President Bruce Bell VK4TRS, Secretary Peter Holtham VK4COZ, Treasurer Les Parker VK4SO.

The Brisbane Amateur Radio Club also conducts the Brisbane "BARCFEST" which has been held since 1982. It is held on the day before Mothers Day

and this year will be held on Saturday 8 May at the Mount Gravatt show grounds.

The club operates the 70 cm repeater VK4RBA, located on the south side of Brisbane. At present it is in test mode on 439.950 output and 434.950 input. It also uses 123 Hz sub audible tone access. Nets are held on Monday evening at 0800 Z on 28.450 MHz and on Wednesday evening at 0800 Z on Brisbane repeater 147.00 MHz. Anyone is welcome on the nets at any time, Les Parker VK4SO is station master. More information is available from Les VK4SO parkerlf@optusnet.com.au

TARC

Townsville Amateur Radio Club has Cyclone Track Maps now available for APRS. Just in time for the curly wind season, maps suitable for Cyclone Tracking across Northern Australia are now available for the Windows uVIEW APRS Client and the Linux XASTIR APRS Client.

Based on a terrific range of Cyclone Tracking Map graphics, authored in 2004 by Carl Smith on the Gold Coast using a battered but trusty 300 MHz Mac G3, the maps have been formatted and calibrated for uVIEW by Gavin VK4ZZ and for XASTIR by David VK4BDJ and are now available for download from The Townsville Amateur Radio Club's Website in the Documents section.

There are also other map collections for uVIEW and XASTIR available there. The maps have been road tested recently tracking TC Olga and TC Neville as dead reckoning updating active objects. Surf to <http://www.tarc.org.au> go to Documents section to download and use. Grab the TARC WICEN Cyclone Tracking Map PDF to use in the shack for when the next series of curly winds come visiting.

TARC's social calendar for April: TARC Management Meeting, Tuesday 6 April from 7:30 pm at SES HQ, TARC Project Night Tuesday 13 April from 7:30 pm at SES HQ, TARC Social Evening Tuesday 20 April from 7:30 pm at SES HQ, Ann Renton Memorial Ladies Net Tuesday 27 April from 7:30 pm on Townsville VHF Repeater

Further information also available at TARC website: <http://www.tarc.org.au>

Until next time 73 Chris VK4VKR
From The Sunshine State **ar**

Barcfest 2010

Mt Gravatt Showgrounds
1644 Logan Road, Mt Gravatt QLD 4122

Saturday 8 May

Doors open 9.30 am
Admission still only \$7.00



For information and site bookings

Contact Les VK4SO on 0411 729 642

Email: parkerlf@optusnet.com.au

Tea, coffee, cold drinks, sandwiches etc will be available at the venue.

ARNSW Centenary Celebration 1910 - 2010

On Sunday 14th March 2010 "Amateur Radio New South Wales" opened its new building at the VK2WI Dural site and at the same time celebrated its formation 100 years ago.

Over 100 members attended the celebrations of the Centenary of the formation of the movement which has become today's WIA and marked the event with the cutting of the Centenary Cake.

The two level building has 450 square metres of working space. It will be put to the test on Sunday 28 March when the bi-monthly Trash and Treasure will operate from its new storage facilities. No longer will it be necessary to extract and display T & T items stored in the former cramped original shed

Three "Elders", (left to right in the photograph) David Thompson VK2BDT, born 1919, Pierce Healy VK2APQ born 1911 and Bill Hall VK2XT born 1912 cut the Centenary Cake, with ARNSW President Beth Langley VK2AO looking on.

ARNSW also celebrated on 11 March - the anniversary of the founding -

with a gathering at the site of the former Hotel Australia in the Sydney CBD.

On Wednesday evening 10 March Tim VK2ZTM and Mathew VK2YAP had a 20 minute live interview on ABC Radio Statewide Program covering the following day's Centenary Celebrations.



Contest News

Congratulations to Rex VK7MO as one of the winners of the 2010 Ross Hull Contest. Rex took out the Digital Modes section with 530 points, closely followed by Wayne Pearson VK5APN with 525 points all gained on 144MHz.

VK7 Repeater News

Brian VK7RR on 25 February 2010 replaced the antenna on the Hobart UHF repeater, VK7RTC. The original antenna was erected in late 1983

This repeater was upgraded last year to a commercial Unilab and reports on audio quality and coverage are excellent. Reports to Brian VK7RR.

Northern Tasmania Amateur Radio Club

The NTARC AGM was held on 11 February 2010 with the following officer holders being elected: President - Bill VK7MX, Vice-President - Peter VK7PL, Treasurer - Ann VK7FYBG, Secretary - Jason VK7ZJA and Committee member - Peter VK7PD. Phil VK7JJ has created a new website for NTARC which can be found at: <http://www.ntarc.net/>

Phil has also been experimenting with a very interesting new path analysis application called "Splat", created by John Magliacane KD2BD.

It is very easy to use and can be found at: <http://splat.ecok.edu/> and Phil has setup an information page at: <http://www.perlite.com/vk7jj/Splat.htm>

Cradle Coast Amateur Radio Club (CCARC)

The CCARC AGM was held on 27 February 2010 with the following officer holders being elected: President - David VK7EX, Vice-President - Dick VK7FOR, Secretary - David VK7DC, Treasurer - Vernon VK7VF and Committee Member - Eric VK7FEJE.

CCARC held a successful garage sale on 14 February in conjunction with the Penguin History Groups Annual Bazaar and it is intended for this to be a regular event to help raise funds for the club.

North West Tasmanian Amateur TeleVision Group

The Club's first AGM was held 13 February 2010 with the following office holders elected: President - Tony VK7AX, Vice-President - Jim VK7JH, Secretary - Steve VK7EQ, Treasurer - Ivan VK7XL and Committee Member - Neil VK7ZNX. Random Node Calling has returned to IRLP Nodes 6124 and 6616. Using the DTMF code "####" the node will automatically connect to a random free and idle nodes somewhere in the world.

WICEN Tasmania (South)

WICEN assisted with providing communications for the inaugural Hobart 'Run the Bridge' run over the Tasman Bridge with 1400 runners and walkers completing the 10 km course from Bellerive on Hobart's Eastern shore to Salamanca Place on 7 February 2010. WICEN used commercial VHF and UHF licensed frequencies along with amateur frequencies for the event and a UHF repeater on Rosny Hill to extend the range of the handhelds. WICEN took the opportunity to publicise amateur radio in the very public place.



Radio and Electronics Association of Southern Tasmania

The AGM of REAST was held 21 February 2010 with the following officer holders elected: President - Gavin VK7HGO, Vice-President - Justin VK7TW, Secretary & Public Officer - Tony VK7FTCL, Treasurer - Richard VK7RO with Committee Members - Barry VK7TBM and Warren VK7FEET.

Richard VK7RO gave the REAST March presentation on his experiments with 7 MHz long wires, dipoles, Beverages, K6STI terminated loops and receiving loops. These experiments were conducted in the grounds of the former OTC Marine Wireless station on top of the Queen's Domain. This talk was very well received judging by the discussion after the talk.

The ATV Experimenters' nights are back in full swing with some notable visitors in recent Foundation licensees Dave VK7FDJB and Geoff VK7FGGA, and Ian VK3AXH who let us know of his EMF experiments and the many contacts he has made using this mode on 1296 MHz. A great big thank you to Paul VK7PAH who has constructed our purpose-built professional presenter's desk.

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Returning to amateur radio

The steady trend, although involving a relatively modest number, is seeing lapsed radio amateurs inquiring about getting back into the hobby.

Each has his/her own story, such as a pending retirement, changed personal circumstances, or having heard that amateur radio has changed greatly in the past five years.

In the past 12 months, Amateur Radio Victoria has helped a dozen such individuals to have their licences restored with just a little paperwork. Perhaps you know of a lapsed radio amateur who could be encouraged to resume their interest in radio?

Event a huge success



The Centre Victoria RadioFest held on 14 February at Kyneton was successful in more ways than one.

Almost 600 people attended including first time visitors from New Zealand and Japan, plus a number from VK2, VKS and VK7.

The Amateur Radio Victoria team with the support of 20 enthusiastic members of the Central Goldfields Amateur Radio Club made things go smoothly. It was the CGARC's major fundraiser for the year.

The Kyneton Country Fire Authority brigade through its catering, using some locally supplied donated or subsidised food, raised \$2,000 that will buy much needed fire truck equipment and firefighter training.

Amateur Radio Victoria is proud to be able to assist local volunteers with their fundraising efforts and also put on the third RadioFest, a great social and networking event.

The Melbourne ATV group had an excellent live digital amateur television display. Scout Radio and Electronics Service Unit ran foxhunting sniffer hunts. Tony Hambling VK3VTH facilitated the well attended four mini-lectures. The presenters put a lot of effort into their contributions to the event and thank you to them.

The Voice of the Centre Victoria RadioFest, Bruce Lees VK3FFF, made program announcements, conducted interviews and was master of ceremonies at the door prize draw.

Well done to the Bendigo District Astronomical Society and all others in the Club Corner Precinct with a record 14 clubs and organisations putting on displays.

Again it was eagerly supported by all the major commercial traders, specialist traders, plenty of private second-hand equipment sellers, the Club Corner Precinct with a record 14 clubs and organisations taking part, four well attended mini-lectures - all making up Victoria's biggest amateur radio event.

Thank you to Australia's largest amateur radio dealer Strictly Ham for the major door prize of a Yaesu 2-metre FM hand-held transceiver, PK-Loops a tuneable AM radio antenna, the WIA for six special WIA Centenary Packs and posters and Vertex Standard a coffee cup and CD.

Bring back general meetings?

Recently a few members have suggested that Amateur Radio Victoria could resume member meetings.

The practice of monthly meetings was discontinued due to a lack of interest, back in the days when the statewide organisation was located at Brunswick Street Fitzroy.

However there have been specialist meetings since then concerning education, public relations activities, emergency communications and repeater coordination. There appears to be scope for another meeting concerning the promotion of amateur radio into schools.

It may be time to hold a meeting of members on a particular topic or with a guest speaker. While at this stage monthly meetings are not being considered it would be good to hear the views of more members.

Volunteer card sorters

The VK3 Inwards QSL Bureau needs volunteers to sort cards as they arrive at the Amateur Radio Victoria office from overseas QSL bureaux.

If you are able to assist with this work on Tuesdays at the office, 40g Victory Boulevard Ashburton, then give John Brown VK3FR a call on the day 9885 9261 or drop him an email at arv@amateurradio.com.au

Annual General Meeting

The AGM of Amateur Radio Victoria (The Wireless Institute of Australia Victorian Division) will be held on Tuesday 18 May, at 7:30 pm. As St Michael's School is currently being redeveloped, the location will be advised later.

All members will receive by e-mail, or post if their email address is not recorded, a copy of the Annual Report. At the AGM a time-capsule containing member contributions from the WIA's 75th anniversary will be opened.

AHARS

Christine Taylor VK5CTY

AHARS held its AGM in February.

There were no changes to the committee, so John VK5EMI is President, Leith VK5KLT Vice President, Richard VK5ZNC Treasurer, Secretary David VK5KC and committee members Graham VK5ZFZ, Jim VK5STR, and Christine VK5CTY, with Barry VK5BW co-opted member dealing with Repeaters and deceased estates.

An interesting talk was given on the night by Steve VK5AIM about heterodynes and super heterodynes. He said a heterodyne is a mixer and that we are using mixers in many activities, even stirring a cup of tea to the mixers in our radios.

He had done research into the history from the discovery of the heterodyne, that extra tone that is produced when two tones are mixed, to the uses of the principle in all radio equipment.

Robin VE3FRH spoke at the luncheon held at the Blackwood RSL rooms on the last Friday of the month. Robin and his XYL had just come back from a few days with Tony VK5ZAI in the Kingston, SE area and were WA bound.

Robin has been involved in AMSAT almost from the beginning when he heard those tiny 'blips' from the first OSCAR. He was President of AMSAT North America for four years and has kept his interest all through the years.

He well remembers OSCAR 13 which was only expected to run for a few months but which ran for years. He

also recalls the reappearance of OSCAR 7 (AO7) which died for nearly 18 years and then reappeared when the batteries that had stopped because of a short circuit, came to life when the short circuit became an open circuit each time it was in the sunlight, running directly from the solar cells.

He mentioned several Australian amateurs involved in early experiments who were remembered by some of the older AHARS members.

He told of some of the many changes that have occurred in the field, for example, in 1969; Jan W3YI carried the first AMSAT across US by air with it sitting on the seat beside him. Now the anti-terror laws prevent this.

In the early days all the work was done by amateurs, now the universities are offering to do the research. Then satellites were only launched if they could be made to fit a space available in a projected rocket. Now we have to pay several million dollars buy space.

Speaking of money: For one satellite, for which amateurs raised \$1,000,000 to build and launch, it has been estimated it would have cost \$135,000,000 if it had been built commercially.

Much early technology was designed by the Germans and was free to be used by all. Some recent technology designed in the US was not allowed to be shared around the world, in the usual way, because this is no longer allowed by law.

One story was about an enquiry from the US government to do with the accuracy of the satellites we use for our GPS devices. The question was whether the GPS positioning system would work for objects in higher orbit than the GPS satellites? Answer: using the system to locate several AMSATS, was yes. The positions given

were within 100 metres of the true positions. The GPS system works on its blind side, too.

A surprising discovery was that measurements of the radiation as the AMSAT went in and out of the Van Allen magnetic belt, was that, contrary to expectations, the radiation did not rise toward the inside and fall as they approached the outside of the belts. In fact the radiation rises rapidly, then falls away as you proceed deeper into the belt, then it rises again as you leave the belt. One day use may be made of this strange discovery.

I am sure that amateurs in other parts of Australia where Robin has been booked to speak will enjoy the talks as much as we, in AHARS, did.

Australia's involvement in amateur satellites goes back to 1965. There is a report in the May AR (p14) about "Project Australis". The Federal Convention of 1966 sponsored "Project Australis" and in November 1969 issue of AR on p 19 there is a report of the forthcoming launch of Australis as Australia OSCAR-5, (Ed: launched 23/10 70

For more information about AMSAT and for programs to locate satellites, go to www.amsat.org

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RAAF Signals & Radar Association of SA

The annual luncheon will be held on Thursday 15 April 2010

(12 noon for 1230 lunch)

(Please bring your Seniors Card)

Venue: Marlon Hotel, Marlon Road, Mitchell Park

Public transport Bus M44, Stop 24

RSVP to one of the following committee members before 14/4/2010:

President & Secretary: Ray Deane VK5RK Phone 8271 5401

Assistant Secretary: Ron Coat VK5RV Phone 8296 6681

Ray Deane Honorary Secretary



Diana, XYL of VE3FRH, Robin VE3FRH and John VK5EMI.

AMSAT

David Giles VK5DQ

vk5dg@amsat.org

A quiet month

February was a quiet month for amateur satellite launches. To fill the spectrum, I present two signal generator projects instead. Also there is news of this month's DXpedition to Vietnam that will have satellite operation and an update on the ARISSat project.

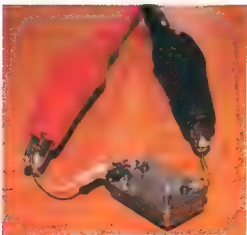


A simple signal source

I alluded to this simple signal source in my article on using the S-band downlink of AO-51 (refer AR May 2009). It consists of little more than a 24 MHz oscillator module and a way of powering it. My module was salvaged from an old PC motherboard. A 5.1 V zener diode and a 270 ohm voltage dropping resistor allow operation from a 9 V battery. A 1 uF capacitor is used for decoupling. A 78L05 voltage regulator would be a better solution but there were plenty of zener diodes in the junk box. The oscillator module case has a square lip corner to designate pin 1. The antenna is the clipped lead from a resistor connected to pin 7 (they are the size of a 14 pin IC even though they have only 4 pins). The 24 MHz value isn't critical. 12, 36, and 48 MHz oscillators will probably work as well.

The signals from this source can be easily received across a room at 144, 432, 1296 and 2400 MHz.

My FT-817 reads S9+ signals on 144 MHz and S7 on 432 MHz on the outside antennas with the signal source in the steel shed; a distance of about 8 m. Do not expect precision frequency accuracy or stability. So far I have used it to test a few antennas and down-converters on 2.4 GHz and antennas on 70 cm.



VK5DQ simple signal source

A second signal source

Geoff VK2ZAZ sent me details of the signal source he uses for 2.4 GHz. The exact module is no longer listed on Jaycar's website, but similar devices should be usable.

He uses the Airwave Technologies AWM630TX 2.4 GHz wireless Audio/Video transmitter module that was available for less than \$20 (Jaycar catalogue number QC-3598). The module will put out a huge signal (1 mW) at 2414.05 MHz.

Whilst this is 12.75 MHz higher than the 2401.2 MHz signal from AO-51 it is close enough. There are spurious peaks around 2401.2 MHz but many dB down allowing further test signals.

He uses 4.5 V from 3 AA size cells to allow portable use of the signal source. The cells are in a 4 cell holder with a short across the spare position.

You can put an audio signal into the unit on pin 4 (or 5) of up to 3 volts in level, this makes it easier to identify the signals.

The 2.4 GHz chip draws about 50 mA, so powering from the 3 AA cells is no problem. The module was assembled onto veroboard and mounted in an aluminium case.



13 cm signal source by Geoff VK2ZAZ.

3W6C DXpedition

Another DXpedition within reach of Australia will be happening this month. The 3W6C Team will be operating from Côn Cỏ Island located in the Gulf of Tonkin off the coast of northern Vietnam during April 10 to 18. Michael HB9WDF reported to the AMSAT-BB mailing list that Hans-Peter HB9BXE will be the main satellite operator (when he is not being team leader and head CW operator). He will be using an FT-897 and home-brewed "Easysat" antenna for 2 m and 70 cm, and a 10 m crossed dipole.

They expect to be active on AO-7, AO-51 and the FM transponder of HO-68. They will also try SO-50 and SO-67 if there is time. From Australia AO-7 and HO-68 will be the best options, the other three might make it to Darwin. AO-7 has been used for several long distance QSOs (7500-7800 km) this year and is the only choice for those in the southern states. Not all passes will be used. The FT-897 will not have computer control so AO-7 operation will be challenging without Doppler correction on his uplink. It is unlikely he will be hearing his own downlink. If there is a pile-up they request only

callsign, signal strength and grid square reports. The website for the DXpedition is www.3w6c.qrv.ch

ARISSat Design review

Gould Smith WA45XM reported that the ARISSat team held a critical design review meeting during February. 23 presentations were made to give an overview and status of the parts that make up ARISSat. Here is a quick summary from those presentations.

All ten cables have been assembled. The Internal Housekeeping Unit (IHU) hardware is fully tested. The software is under ongoing development. The power supplies that convert from the 28 V - 36 V of the battery down to 5 V and 3.3 V have been hardware tested but some software needs developing.

The antennas need to be assembled and tested. The flight version of the astronaut control box needs assembling. The flight mechanical structure is not completed. The software defined transponder (SDX) prototype hardware has been tested but the flight version needs to be constructed and tested. The cameras have been tested. There remain

mechanical issues with mounting and mirrors. All the software needs verification.

The silver-zinc battery has been purchased but needs its characteristics measured and tested with the rest of the power supply sections. The solar panels will have Lexan covers to protect them before deployment. Tests are needed on how the Lexan panels will affect the amount of electrical power generated and the spacecraft temperature. If the panels are removed then it gets full power but it complicates the amount of work during deployment by the astronauts. The maximum power point tracker is used to extract the most power from the solar panels. It needs to be fully tested with the test battery and under simulation.

The telemetry system needs more software developed and the characteristics of the sensors measured during the environmental tests. The rest of the transmission system (CW, SSTV, FM voice, and BPSK) has been tested and only minor additions are needed.

The design for the shipping container to get ARISSat to Russia has not been



AMSAT-VK

AMSAT Co-ordinator

Paul Paradigm VK2TXX
email coordinator@amsat-vk.org

Group Moderator

Judy Williams VK2TJU
email secretary@amsat-vk.org

Website

www.amsat-vk.org

Group site:

group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications,

including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.

AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net

australian.amsat-vk.org

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0630 Z or 1030 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making "skeds" and for a general "off-bird" chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales

VK2RMP Maddens Plains repeater on 146.650 MHz



VK2RIS Saddleback repeater on 146.975 MHz

VK2RBT Mt Boyne Repeater on 146.675 MHz

In Victoria

VK3RTL Laverton, Melbourne, 438.600 MHz
FM, 91.5 Hz CTCSS tone access

In South Australia

VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Temble on 439.825 MHz IRLP
node 6278, EchoLink node 399996

In Tasmania

VK7AX, Ulverstone on 147.425 MHz

In the Northern Territory

VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM repeaters in the sky with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.

Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

started The Russian experiment to measure vacuum as ARISSat de-orbits won't be available for testing until the satellite has gone to Russia. Simulation programs have been used for software development so far.

The interconnect board has problems with isolating power between solar panel and batteries. This is the only area that has been identified in the presentations that will terminate the mission. If the main battery fails then ARISSat will be unrecoverable. The design calls for a way to isolate the battery from the solar panels if it fails.

Overall the flight hardware needs finishing. Then it will need environmental testing where it is subjected to extremes of vibration and temperature in a vacuum. Plenty of minor but vital work needs to be done to complete ARISSat, even down to painting it with signage in English and Russian. The software will probably be ongoing until it is ready to be launched.

PDF files of the 23 presentations are available from the ARISSat website at www.arissat.org

The launch date was put back earlier

this year (it was originally intended to go in January). Discussions with NASA are under way for a launch later this year.

Final Pass

Home-brewed test equipment does not need to be complicated. Better yet when potential sources of unwanted signals can be put to good use. The ARISSat presentations give another glimpse into how much effort is put into constructing satellites.

The WIA Centenary Committee Call for Articles

The WIA Centenary Committee wishes to acknowledge receipt of further historical material forwarded by members and others. This month, the Committee wishes to thank the following:

- Helene VK7HD for a tape recording of a radio interview she did in December 1986 about ladies in amateur radio. This will be added to the WIA's Sound Archive.
- Bruce Carty, Chairman, Radio

Yesteryear for a CD ROM of a number of articles relating to the early history of AM Radio in Australia. This will be added to our Archive for use by future researchers. Some interesting material can be found on their website: www.radioyesteryear.com.au

- Britt VK3AOB transferred early "u-matic" video tapes to DVD. These contained images of a number of well known amateurs interviewed on commercial television and will be added to the institute's archive.

Thank you to all who have contributed to date, but we would like more! Please help us to preserve the history of our hobby by writing something about your club, outstanding amateur or significant event.

The committee also welcomes articles on the future of amateur radio. The changes foreseen and even predictions for our future. Many new modes are being adopted by the more progressive amateur, how are these going to set the stage for the future amateur?

VK3news from Tony Collis VK3JGC

Geelong Amateur Radio Club – The GARC

IRLP at the GARC

Nick VK3TY reported the predictable decline of the IRLP operation, using node 6572, over the Christmas and New Year period. December & January operations have been stable.

Connection Type	Jan 2010	Dec 2009	Nov 2009
Connections to other nodes	21 (54%)	22 (31%)	74 (72%)
Connection to the GARC node	11 (15%)	15 (35%)	23 (22%)
Connections to reflector station	7 (10%)	8 (14%)	8 (5%)
Traffic Totals	39	45	105

At this juncture the node is operating in simplex mode with low power from Bannockburn. The end game is to operate it through VK3GRC; which itself is going through an upgrade by Ken VK3NW, Bert VK3TU and Peter

VK3WK, but progress is slow due to problems with site access.

New Members for the GARC

At the start of 2010, two members were elected into the Club, Chris Murphy and Stewart Wilson VK3FEM.

Australia's Biggest Morning Tea, for Cancer Relief

The GARC's participation in this Australia wide event is being organised

by Vanessa VK3FUNY and Jenni VK3FJEN at the club house in Storrer Street, East Geelong, to take place on Saturday 29 May from 10 am to 2 pm. This will be gold coin donation event. The Biggest Morning Tea is the leading Cancer relief fundraising event and the largest, most successful event of its kind in Australia. Over \$60 million has been raised since it first began in 1994.



Vanessa VK3FUNY



Jenni VK3FJEN

spotlight on **SWLING**

Robin L. Harwood VK7RH

It has been a surprise to me that a quarter of the year has already passed by. The good news is that the Sunspots have increased, allowing improved propagation. The downside is that there have been further cutbacks. I believe that there is now a proposal for the International Broadcasting Bureau to close down the only remaining US transmitting site at Greenville, North Carolina. The IBB supervises the VOA as well as surrogate clandestine broadcasters such as RFE/RL, Radio Farda and Radio Marti. This does not mean that these stations are closing but should continue from sites outside of the continental United States. Whether this proposal will go ahead is unclear at present.

The former Radio Australia site on Cox Peninsula in the Northern Territory did indeed fall silent on January 31st at 2359 UTC. It was leased for the past five years by a British-based evangelical network. Programs came from a studio near Maroochydore (Qld). I believe a review was made last year, and a decision was made not to renew the lease, when it fell due on the 30th of June. Radio Australia did use their former site over that period and had to hastily find alternative sites when Cox Peninsula closed down. As far as I am

aware there are no plans to resurrect the site and the senders have probably been dismantled anyway.

Propagation has certainly improved with the higher frequencies at last being heard. Predictions are that there will be a rapid return to higher numbers with the peak perhaps around July 2012, which coincidentally is the time of the Olympics in London. A good indicator of how propagation is faring can be gauged on 7130. This has become an unofficial DX calling frequency. I find the weekday net organised by VK7ROY at around 1030 a reliable marker to evening propagation. Also around 2000, several VK's have had success working into Europe and the east coast of North America.

Some of you may be wondering as to the identity of the strong broadcast station on 7110 in our local early mornings. I can confirm that it originates from Addis Ababa, Ethiopia and is in local languages. I can also hear it on 9704 at the same time. The same station is on 7175 but in a different language akin to Arabic. The only time I previously heard Ethiopia was close to 40 years ago when I heard a station operated by the former

Sudan Inland Mission (SIM) in English. It was around 15100 at 0100. It was the only time I heard it and now Ethiopia is easily being heard daily.

Incidentally there has been an ongoing war between Ethiopia and its former northern province of Eritrea. Both nations regularly jam each other's transmissions and both seem to have picked the now exclusive 40 meter amateur allocation between 7100 and 7200 to conduct their radio war.

I have reported that Burma, now known as Myanmar, was being heard around 9730 at 1030 till 1130. It was not strong and was easily wiped out by the BBC in Singapore, broadcasting in Burmese. Now this station has popped up on 7186 from 1130 with a much stronger signal. Perhaps they have chosen this channel because international broadcasters have now mostly vacated this portion of the band. It is no accident that North Korea also freely operates in this portion of 40 meters as Myanmar and North Korea have close military and political ties.

Do not forget you can email me your news and comments to vk7rh@wia.org.au

AR



EZARC is pleased to announce GippsTech2010. This year the main program will be held on Saturday July 10 and Sunday July 11.

This event has a well-recognised reputation as the premier technical conference in VK, with its focus primarily on techniques applicable in the VHF, UHF and microwave bands, especially for weak-signal contacts.

In addition to the Conference, a Partner's Tour will be conducted,

together with an informal social gathering for dinner on Friday and a Conference Dinner on Saturday.

Anyone who presented at GippsTech2009 and has not yet forwarded their material for the *Proceedings* volume will receive a reminder from VK3PF very soon!

Further details can be found at the Eastern Zone Amateur Radio Club web site at <http://www.vk3bez.org/>



Call for papers

Amateurs (and others with material to contribute) are invited to submit titles and outlines for topics to be presented at GippsTech2010.

Presentation slots can be brief (5 – 10 minutes) through to one hour. Anything longer – you will need to justify!!

Potential presenters are welcome to contact the Chair of the Organising Committee, Peter VK3PF (vk3pf@wia.org.au), direct for further information or to suggest a topic.

AR

Contests

Craig Edwards VK8PDX vk8pdx@yahoo.com.au

It is fair to say that the radio sport year is well underway and when you couple that with improved solar conditions, then contesting is becoming a hell of a lot of fun, even if you just spend a little bit of time during an event to tune the bands.

An example of that is the WPX RTTY contest. This weekend clashed with

Valentine's Day and more importantly my birthday! So it was a casual effort at best and I spent time looking for new band countries on 40 m and 15 m.

It was a great thrill to bag some new ones. The almost hopeless frustration of finally making a QSO with CN2R on 15 m after an hour of calling was balanced by grabbing 4O3A on 40 m after one call early Monday morning! Even with this casual effort there were

over 200 Qs in the log and was lots of fun. So just remember you do not need to be going for a certificate and spend a lot of hours in front of the rig to enjoy a contest.

As I write this I have been given approval from the work boss and home boss to make a serious effort on the WPX SSB contest so fingers crossed those sunspots continue rolling in.

Results of the inaugural 2009 VK Shires Contest

Winners:

VK Single Op VK7ZE - donated by Phil Smeaton VK4KW

VK Multi Two VK4WIL - donated by Laurie Porter VK4VCC

VK Single Op Foundation VK2FEDS - donated by Nick Hacko VK2DX

VK Single Op Rover VK5HRT (now VK8PDX) - donated by John Ferrington VK6HZ

VK Multi Two Rover VK4YN - donated by Trent Sampson VK4TI

DX Single Op

North America W6RKC - donated by Craig Edwards VK8PDX

Asia JA6DIJ - donated by Diane VK4KYL and Bill Main VK4ZD

Europe IZ8GNNR - donated by Andrew Munson VK4HAM

VK5NJ Trophy Most CW contacts by any station - VK4YN.

Committee Award for outstanding contribution to the contest - Neil Shand VK4FHYH.

Neil travelled from Brisbane to Goondwindi Shire for the contest a round trip of 700 kilometres - thanks from the committee and everyone else who managed to get Goondwindi Shire in the log due to your efforts.

Thanks to everyone who made special efforts for the contest - great publicity from our WIA Contest Editor VK5HRT (now VK8PDX), VK3HJ who made an effort in activating multiple shires, VK4YN portable and anyone who actually operated in the contest well done. Regards to you all, Trent VK4TI and Bill VK4FW.

C ALL	SCORE
Single Op	
VK7ZE	115432
VK4VCH	46110
VK2TSB	32704
VK4SN	26082
VK2HBG	18648
VK3LDR	15707
VK5NPR	13624
VK4VDX	12288
VK4ATH	10260
VK2BPL	10120
VK4IM	9265
VK3HJ	8774
VK4HG	8748
VK3ZPF	6840
VK3AVV	4725
VK4XY	4502
VK2KDP	3696
VK2VRD	2585
VK4PDR	2544
VK4MHZ	2337
VK2HV	2322
VK7VH	2205
VK7AD	2112
VK2IO	2100
VK2IO	2100
VK4CL	2058
VK21CD	1786
VK2NCD	1638
VK4FNO	1584
VK3ZGP	1443
VK2MRN	1360
VK3AJB	840
VK2HHS	784
VK2GR/S	704
VK3TDX	440
VK3KIH	440
VK2ZCM	272

VK3TX	100
VK2TTL	64
VK4PJC	56
VK4SWE	25
Multi Two	
VK4WIL	88257
VK2BV	11160
VK2LE	990
Single Rover	
VK5HRT	35168
Multi Op Rover	
VK4YN	31725
VK4GHL	31418
Foundation	
VK2FEDS	42504
VK7FWAY	19992
VK4FABC	17649
VK2FAJA	17094
VK2FHRK	11000
VK2FDDK	4884
VK4FHYH	1296
VK4FABD	783
VK3FAJM	100
Asia	
JA6DIJ	16
JA7OWD	1
North America	
W6RKC	100
KD6HHG	6
Europe	
IZ8GNNR	4

CONTEST CALENDAR

April	3-4	Polish SP DX Contest	CW/SSB
	3-4	Spanish EA RTTY Contest	RTTY
	10-11	Japan International DX Contest	CW
	10	European Sprint	CW
	11	HF International Vintage	CW/SSB
	17	NZ Sprint – 80 m	RTTY
	17	TARA Skirmish	PSK31
	17	European Sprint	SSB
	17	Holyland DX Contest	All
	24	Harry Angel Sprint	CW/SSB
	24	NZ Sprint – 40 m	RTTY
	24-25	Polish SP DX Contest	RTTY
	30 April to May 6	Westlakes CQ Repeater Contest	All
May	All	WIA Centenary QRPContest	CW/SSB/AM

Kiwi Digital Modes Group - 2010 VK/ZL RTTY Sprint

The second running of the Kiwi Digital Modes Group RTTY contest will take place in April 2010.

Each station is to be contacted once per night. All duplicate contacts on the same night will be eliminated from the operator's log sheet.

This contest will take the format of a one hour sprint run over two consecutive Saturdays. The first night will be on 80 metres and the second night will be on 40 metres.

The contest is open to all licensed amateur radio operators living in the VK & ZL callsign districts.

Saturday April 17th 2010 – 1000 UTC – 1100 UTC, 80M only

Saturday April 24th 2010 – 1000 UTC – 1100 UTC, 40M only

Operators can choose to enter one of the three following categories:

80 metres only.

40 metres only.

80 metres / 40 metres combined.

Certificates will be issued for the following categories:

80 m only: The top three scores from VK and top three scores from ZL.

40 m only: The top three scores from VK and top three scores from ZL.

80 m / 40 m combined: The top three scores overall irrespective of which country the contestant has entered from.

In other words there will not be separate certificates issued for the top three from each country as is the case in the 80 m and 40 m only categories. This will hopefully encourage more operators to partake in both nights.

The points system is as follows:

1 point for each ZL to ZL contact.

1 point for each VK to VK contact.

3 points for each VK to ZL and ZL to VK contact. This puts a little more emphasis on working the DX contacts between VK & ZL.

Log Sheets are to contain the following:

Callsign of station worked.

Time.

Signal Report Sent & Received.

Points Claimed for Each Contact.

A separate Log Sheet is required for each night of the contest with the operating band and date specified. In addition, a separate summary sheet advising what category is being entered into along with the operator's Name, Address, Callsign and a declaration that all good amateur radio operating practices have been observed for the duration of the contest

Logs are to be received by the organizer no later than 23 May 2010.

Logs can be sent electronically to: zl2sky@zl2ko.org.nz

Alternatively they can be posted to:

KDMG RTTY CONTEST
365 High Street
Dannevirke 4930
New Zealand

Continued overleaf

Take your marks!!

106 minutes sprint

Harry Angel Memorial Sprint 2010

24 April 2010 1000 Z – 1146 Z

This year is the 12th Anniversary of an annual Contest to remember VK's oldest licensed operator, Harry Angel. Note the time length of the Contest - 106 minutes, Harry's age when he died in 1998. It is open to all HF operators.

Object is to make as many contacts as possible on band 80 metres, using modes CW and SSB.

Category: Single Operator

Sections: CW, Phone, Mixed (please choose ONE ONLY).

Frequencies: CW: 3500 - 3535 kHz, Phone: 3550-3590 kHz; 3650-3665 kHz

Exchange RS(T) and serial number starting at 001.

Score two points per CW QSO and one point per Phone QSO.

Stations may be worked once only per mode. Logs must show time UTC, callsign worked, mode, RS(T), serial numbers sent and received for each QSO. Sending Logs: Email is the preferred method to vk3js@zoho.com (Please note that even for email logs, the entrant's name, callsign and postal address are required, as per the Summary Sheet).

Send Written Logs to Harry Angel Sprint, 121 Railway Parade, Seaford 3198, by 2010 May 7th Friday.

Send summary sheet showing name and date of Contest, name, address and callsign of entrant, category entered,

points claimed and a declaration that the rules and spirit of the Contest were observed.

Notes:

1. Please submit your logs as soon as possible after the Contest and do not forget to include your postal address (you cannot know if you may be a section winner!!).

2. The VKCL logging program covers this contest. This way everything can be kept electronic.

3. Please make this a special effort to commemorate this 12th Anniversary within the WIA 100 Years celebrations.



WIA Centenary QRP Contest

May QRP Contest 2010

Sponsored by the VK QRP Club, the following contest is designed to encourage interest in the use of low-level power to make contacts during the month of May 2010.

All licensed Amateurs are eligible to participate and are encouraged to do so.

The only limitation is that output power must be kept within QRP bounds of five watts for CW contacts and ten watts for Phone.

Object is to work as many stations as possible during the month of May 2010, operating within a three-hour time slot each evening, then to select your best 20 days of the month as your entry to the contest.

Categories: Open and Foundation Licensees.

Bands: 80 and 40 metres

Modes: CW, AM, SSB

Hours of Operation: 1000

– 1300 UTC daily. (During the last hour, E stations are asked to listen particularly for C and W.)

Exchange RS(T) and Serial Number starting at 001 and incrementing by one for each contact.

Scoring: To make scoring as uniform as possible, we shall use the natural groupings of States as follows —

Eastern E (VKs 4,3,2,7); Central C (VKs 8,5); Western W (VK6), External (VKs 9,0); DX (any call area outside VK).

Contacts within each group score one point per QSO;

Contacts between E and C score two points per QSO;

Contacts between E and W score five points per QSO;

Contacts between C and W score two points per QSO;

Contacts from all mainland areas to External score 10 points per QSO.

Contacts from all VK areas to DX score 20 points per QSO.

Logs should show the name, postal address and callsign of the entrant; callsign of station contacted; exchange; best 20 days of logs as selected by entrant.

Send logs to VK3JS, 121 Railway Parade, Seaford, 3198; or by email to vk3js@zoho.com by 2010, Friday 11 June. (Email is the preferred method.) (NB Do not forget to include your postal address, as you cannot know if you may be a winner!)

Certificates will be available to the highest scorers in each State in each Category and Mode for best 20 days.

SUMMER VHF-UHF FIELD DAY 2010: RESULTS

Contest Manager: John Martin VK3KM

The Summer VHF-UHF Field Day attracted 86 logs this time, which is another new record. Congratulations to all. See you again in June. Remember that stations entering all three 2010 Field Days will receive a special certificate in December. The certificates will be based on callsign, so to be eligible you must operate under the same callsign each time.

A change for the Winter Field Day will be the introduction of a new Rover section. Full details will be published in *Amateur Radio* magazine and on the WIA web site.

Call	Name	Location	50 MHz	144 MHz	432 MHz	1296 MHz	2.4 GHz	3.4 GHz	5.7 GHz	10 GHz	TOTAL
Section A: Single Operator, 24 Hours											
VK5ZD	Iain Crawford	PF85, PF96	85	378	485	680	540	650	-	-	2818
VK4OE	Doug Friend	QG61, QG62	83	363	555	648	530	210	-	360	2749
VK5ZT	Tim Dixon	PF84, 85, 95, 96	54	258	405	744	540	650	-	-	2651
VK3LY	Bill Day	QF04	158	480	710	704	-	-	-	-	2052
VK5LD	Dale Loffler	PF96	78	378	515	648	-	-	-	-	1619
VK5AKH	Andrew Hall	PF85, PF95	89	318	390	480	-	-	-	-	1277
VK3VCL	Wayne Bruce	QF12	-	258	415	472	-	-	-	-	1145
VK5OQ	Keith Gooley	PF95	49	231	330	464	-	-	-	-	1074
VK3FEMT	Stewart Wilson	QF22	-	378	270	-	-	-	-	-	648
VK2YJS	Julian Sortland	QF56	-	75	115	-	-	-	-	-	190
Section B: Single Operator, 8 Hours											
VK5ZT	Tim Dixon	PF84, 85, 95, 96	21	216	270	544	420	530	-	-	2001
VK3HY	Gavin Brain	QF32	159	441	640	688	-	-	-	-	1928
VK3BJM	Barry Miller	QF23	21	330	490	592	210	-	-	-	1843
VK2DAG	Matt Hetherington	QF57, 58, 67, 68	55	396	425	528	-	-	-	-	1404
VK3YFL	Bryon Dunkley-Smith	QF22	70	288	300	592	-	-	-	-	1250
VK5LD	Dale Loffler	PF96	58	288	340	544	-	-	-	-	1230
VK4ADC	Doug Hunter	QG61	186	312	320	392	-	-	-	-	1210
VK2HRX	Compton Allen	QF56	50	411	260	320	-	-	-	-	1041
VK5AKH	Andrew Hall	PF85, PF95	54	225	305	448	-	-	-	-	1032
VK2TDN	Dave Nelson	QF56	-	171	260	296	-	-	-	230	957
VK1AGP	Greg Parkhurst	QF44	39	390	320	-	-	-	-	-	749
VK2TRF	Jack Swart	QF56	-	72	110	-	-	-	-	230	412
VK5HZ	Darryl Ross	PF95	-	174	235	-	-	-	-	-	409
VK5FXYL	Jade Ross	PF95	-	102	165	-	-	-	-	-	267
VK4NA	Alan Willis	QG62	-	96	160	-	-	-	-	-	256
VK3TOM	Tom Steadman	QF31	21	72	120	-	-	-	-	-	213
VK5KLV	Les Virgo	PF87	32	165	-	-	-	-	-	-	197
VK3SF	Ross Sargent	QF22	-	63	-	-	-	-	-	-	63
VK4JAZ	Grant McDuling	QG62	-	63	-	-	-	-	-	-	63
VK5FPAW/2	Paul Schultz	QF56	-	36	-	-	-	-	-	-	36

Call	Name	Location	50	144	432	1296	2.4	3.4	5.7	10	TOTAL
			MHz	MHz	MHz	MHz	GHz	GHz	GHz	GHz	
Section C: Multi Operator, 24 Hours											
VK3UHF	LUMEG (1)	QF21	106	780	1030	1352	1030	470	740	860	6368
VK3ER	EMDRC (2)	QF22	264	969	1245	1416	1050	230	230	-	5404
VK3ALB	(3)	QF11	-	684	850	1192	840	-	360	770	4686
VK4WIS	(4)	QG63	193	657	730	752	630	-	-	460	3422
VK3TU	(5)	QF01	-	366	555	600	590	230	480	500	3301
VK3JTM	(6)	QF12	56	342	465	696	620	-	-	360	2539
VK5ARC	SCARC (7)	PF94	203	672	790	680	-	-	-	-	2345
VK1DA	(8)	QF44	39	696	760	392	210	-	-	230	2327
VK4WR	(9)	QG61	137	546	635	792	210	-	-	-	2320
VK5SR	SERG (10)	QF02	-	243	355	352	430	-	320	440	2140
VK3ATL	GARC (11)	QF11	32	381	615	560	-	-	-	470	2058
VK3APC	MDRC (12)	QF22	160	348	535	688	-	-	-	-	1731
VK2MA	HADARC (13)	QF56	189	582	440	176	-	-	-	220	1607
VK2HZ	BMARC (14)	QF56	151	270	290	-	-	-	-	-	711
VK5LZ	Elizabeth ARC (15)	PF94	40	288	340	-	-	-	-	-	668

Section D: Multi Operator, 8 Hours

VK3ALB	(3)	QF11	-	381	500	616	690	-	220	570	2977
VK4W E	CBRS (16)	QG62	246	384	175	496	-	-	-	210	1511
VK2AWA	Contest Group (17)	QF56	248	513	340	264	-	-	-	-	1365
VK4SN	(18)	QG62	223	285	300	-	-	-	-	-	808
VK5OM	(19)	QF02	-	165	215	-	-	-	-	-	380
VK2AWL	ARNSW (20)	QF43	-	198	160	-	-	-	-	-	358

Section E: Home Station, 24 Hours

VK3MY	Ross Keogh	QF22	73	537	875	1176	880	-	-	-	3541
VK3KH	Michael Coleman	QF21	44	282	410	568	460	-	-	-	1784
VK3ZQB	Russell Lemke	QF11	-	228	365	560	-	-	-	570	1723
VK4ZDP	David Purkis	QH32	179	429	670	256	-	-	-	-	1534
VK3XPD	Alan Devlin	QF22	-	207	400	560	-	-	-	220	1387
VK2AMS	Mark Swannack	QF68	51	450	415	144	160	-	-	-	1220
VK3PF	Peter Freeman	QF31	106	258	300	448	-	-	-	-	1112
VK2EI	Neil Sandford	QF68	50	411	220	168	250	-	-	-	1099
VK2JDS	Dave Scott	QF46	34	480	230	352	-	-	-	-	1096
VK3VFO	Nick Kraehe	QF31	73	450	360	176	-	-	-	-	1059
VK2KRR	Lugh Rainbird	QF34	-	339	285	368	-	-	-	-	992
VK4TJ	John Kirk	QG52	44	282	290	304	-	-	-	-	920
VK2MER	Kirk Mercer	QF55	38	429	235	208	-	-	-	-	910
VK5NE	Paul Roehrs	PF95	63	402	445	-	-	-	-	-	910
VK5LSB	Simon Brandenburg	PF94	39	363	480	-	-	-	-	-	882
VK4DMC	Dale McCarthy	QH22	120	327	315	-	-	-	-	-	762
VK5ALX	Alex Ginski	PF86	69	249	200	192	-	-	-	-	710
VK2TG	Robert Demkiw	QF55	69	198	390	-	-	-	-	-	657
VK4AR	Gary Ryan	QG62	55	207	330	-	-	-	-	-	592
VK3KIS	Andrew Kayton	QF22	38	117	165	216	-	-	-	-	536
VK5NY	Roger Bowman	PF94	34	99	165	168	-	-	-	-	466
VK2BHO	John Hodgkinson	QF55	47	168	190	-	-	-	-	-	405
VK4FNQ	John Godfinch	QG29	64	192	135	-	-	-	-	-	391
VK3HV	George Francis	QF31	83	111	170	-	-	-	-	-	364
VK1PAR	Al Long	QF44	26	192	135	-	-	-	-	-	353
VK2NR	David Porter	QF56	-	105	170	-	-	-	-	-	275
VK2TV	Peter Mahoney	QF56	-	153	120	-	-	-	-	-	273
VK3TOM	Tom Steadman	QF31	23	81	125	-	-	-	-	-	229
VK5FANA	Adrian Addison	PF85	-	225	-	-	-	-	-	-	225
VK4MHZ	Brendan Cannon	QG62	-	96	105	-	-	-	-	-	201
VK3BG	Ed Roache	QF24	21	63	105	-	-	-	-	-	189
VK4EKA	Dougal Johnson	QG62	21	168	-	-	-	-	-	-	189
VK3FZ	Roger Stafford	QF22	21	39	110	-	-	-	-	-	170
VK5FMPJ	Patrick Morgan	PF94	-	150	-	-	-	-	-	-	150

Notes continue next page

Notes

- (1) Lara UHF-Microwave Experimenters Group David Learmonth VK3QM, Charlie Kahwagi VK3NX, Chas Gnaccarini VK3PY
- (2) Eastern & Mountain District Radio Club VK3AVV M. Subocz, VK3QI P Forbes, VK3WT M Chadwick, VK3WWW J. Bramham
- (3) Lou Basco VK3ALB, Nik Presser VK3BA, Jenni Blasco VK3FJEN, Michael Blasco VK3FMIC
- (4) Sunshine Coast ARC: Wayne Shaw VK4WS, John McPherson VK4JMC, Cec Tysoe VK4FMOZ, Bill Booth VK4WB, Richard Philip VK4RY, Leicester Hibbert VK4ALH, Kirsty Golder, Dave Carr
- (5) Bert Gnaccarini VK3TU, Ken Jewell VK3NW
- (6) VK3JTM : Tim Morgan, VK3YLV : David Timms
- (7) South Coast ARC: VK5KBJ, VK5HSX, VK5LA
- (8) Andrew Davis VK1DA, Dale Hughes VK1DSH
- (9) Alan Meek VK4WR, Adam Maurer VK4CP
- (10) South East Radio Group. Colin Hutchesson VK5DK, John Drew VK5DJ, Tim Hann VK5AV, Ian Bishop VK3FNL, Trevor Niven VK5NC
- (11) Geelong ARC: Garry Allwood VK3FWGR, Lee de Vries VK3PK, Dallas Jones VK3DJ
- (12) Moorabbin & District Radio Club: Ian Morris VK3IFM, Lee Moyle VK3GK, Gerard Werner VK3GER
- (13) Hornsby & District ARC: Rod VK2DAY, Paul VK2FMAM, Steve VK2BCD, Paul VK2PDS, Peter VK2TTP, Dave VK2FDIW, Dave VK2DMH, Justin VK2CU
- (14) Blue Mountains ARC. VK2AOR, VK2FTTP, VK2LET, VK2FMJB
- (15) Elizabeth ARC: Bruce Gauci VK5VAB, John Ross VK5NI
- (16) City of Brisbane Radio Society John Morris VK4MJF, Ron Croucher VK4CRO
- (17) VK2AWA Contest Group: VK2BD, VK2IM, VK2OJ, VK2VK, VK2BPL, VK2FHRK
- (18) VK4SN, VK4TI, VK4HAM
- (19) Jim Bywaters VK5OM, Den Sharp VK3FDAS
- (20) Amateur Radio NSW: VK2JDH, VK2JDD, VK2KCM

Ross Hull Memorial VHF-UHF Contest 2010: Results

Contest manager: John Martin VK3KM

Activity in this year's contest was again far less than hoped for. After the 2009 test run of a scoring system based on Maidenhead locators, the comments received indicated that the scoring system should revert to the traditional distance-based scoring, so as to allow the scores to fully reflect achievement in making DX contacts. The change was made for this year's contest, but unfortunately it did not lead to increased activity.

The other change made this year was to relax the scoring restrictions on 6 metres, by doubling the band multiplier and removing the scoring cap on sporadic E contacts. This brought about some increase in 6 metre activity, but it did not flow through and stimulate more activity on the higher bands. The aim of the scoring system has been to keep

the scoring potential of all bands approximately equal, but at present they are quite unequal. The 6 metre scoring will be reviewed, especially as the solar cycle develops, but the most desirable fix for the scoring inequality would be an upsurge of contest activity on 2 metres and higher bands.

How to achieve this is still not clear. It is not difficult – one whole month in which to make DX contacts, but the scoring is based on up to seven contest days. Many entrants have achieved excellent scores while operating for less than seven days.

Congratulations to this year's winners, Ted Thrift VK2ARA and Rex Moncur VK7MO. Also noteworthy is Gavin Brain VK3HY for achieving the top score on 432 MHz, and Stephen Hayman ZL1TPH for making the top scores on 144 and 1296 MHz.

Call	Name	50 MHz	144 MHz	432 MHz	1296 MHz	TOTAL
Section A: All Bands						
VK2ARA	Ted Thrift	2638	108	85	-	2831
VK3HY	Gavin Brain	472	183	220	152	1027
VK2AH	Brian Farrar	796	126	65	-	987
ZL1TPH	Stephen Hayman	-	300	-	208	508
VK2TG	Robert Demkiw	254	147	85	-	486
VK6ADI	Barrie Burns	289	129	-	-	418
VK5FMPJ	Patrick Morgan	-	6	-	-	6
Section B: Digital modes, All Bands						
VK7MO	Rex Moncur	-	530	-	-	530
VK5APN	Wayne Pearson	-	525	-	-	525
VK3HY	Gavin Brain	-	432	-	-	432
VK1WJ	Waldis Jirgens	-	165	-	-	165

ROSS HULL CONTEST
LIST OF WINNERS 1950 - 2010
appears on page 56

Gridsquare Standings

at 12 February 2010

Guy Fletcher VK2KU

144 MHz Terrestrial

VK2FLR	Mike	113
VK3NX	Charlie	106
VK2KU	Guy	102
VK3PF	Peter	88
VK3HZ	David	85
VK2ZT	Steve	80 SSB
VK2ZAB	Gordon	78 SSB
VK5AKK	Phil	78 SSB
VK2DVZ	Ross	77 SSB
VK3PY	Chas	73 SSB
VK3CY	Des	71
VK3BDL	Mike	65 SSB
VK7MO	Rex	64
VK2EI	Neil	63
VK3QM	David	63 SSB
VK2TK	John	62
VK3BJM	Barry	61 SSB
VK4FNQ	John	59
VK4FNQ	John	58 SSB
VK3II	Jim	56
VK3II	Jim	55 SSB
VK3WRE	Ralph	55 SSB
VK3PF	Peter	54 SSB
VK3ZLS	Les	51 SSB
VK2AMS	Mark	50 SSB
VK4CDI	Phil	49
VK3HY	Gavin	48
VK5BC	Brian	48 SSB
VK3CAT	Tony	46
VK3VG	Trevor	46 SSB
VK7MO	Rex	46 SSB
VK4CDI	Phil	45 SSB
VK7MO	Rex	44 Digi
VK4KZR	Rod	43
VK5BC/p	Brian	42 SSB
VK3PF	Peter	39 Digi
VK4TJ	John	39 SSB
VK2TK	John	35 SSB
VK2KOL	Colin	34 SSB
VK3DMW	Ken	34
VK6HK	Don	34
VK2TG	Bob	33 SSB
VK3EJ	Gordon	33 SSB
VK3ZUX	Denis	33 SSB
VK1DA/p	Andrew	31
VK2MER	Kirk	30 SSB
VK3VHF	Rhett	29 SSB
VK1WJ	Waldis	27
VK2EAH	Andy	27
VK2TK	John	27 Digi
ZL3TY	Bob	24

VK3TLW	Mark	23 SSB
VK4EME	Allan	23
VK1WJ	Waldis	22 Digi
VK3BG	Ed	22 SSB
VK3II	Jim	21 Digi
VK4CDI	Phil	21 Digi
VK3ECH	Rob	20 SSB
VK6KZ	Wally	20
VK4EME	Allan	19 SSB
VK3AL	Alan	18 SSB
VK3UDX	Geoff	17 SSB
VK2EAH	Andy	16 SSB
VK6KZ/p	Wally	16
VK3VHF	Rhett	12 Digi
VK4EME	Allan	12 Digi
VK2EAH	Andy	11 Digi
VK2EI	Neil	11 Digi
VK2KOL	Colin	9 Digi
VK2ZT	Steve	9 Digi
VK1WJ	Waldis	6 SSB
VK6DXI	Mirek	6
VK6HK	Don	6 Digi
VK1WJ	Waldis	5 CW
VK4AIG	Denis	5 SSB
VK4JAZ	Grant	3 FM
VK2DVZ	Ross	2 Digi
VK2AMS	Mark	1 Digi
VK3QM	David	1 Digi
VK4FNQ	John	1 FM

144 MHz EME

VK2KU	Guy	372
VK2KU	Guy	357 Digi
ZL3TY	Bob	300
VK3AXH	Ian	265 Digi
VK4CDI	Phil	182 Digi
VK7MO	Rex	155 Digi
VK2FLR	Mike	120
VK3CY	Des	70 CW
VK2AWD	David	65 Digi
VK2KU	Guy	43 CW
VK3DDU	Paul	39 Digi
VK2ZT	Steve	28 Digi
VK3VHF	Rhett	20 Digi
VK3HZ	David	19
VK3II	Jim	14 Digi
VK3NX	Charlie	5 CW
VK4EME	Allan	5 Digi
VK3AXH	Ian	3 CW
VK2DVZ	Ross	2 CW
VK3AXH	Ian	1 SSB

432 MHz Terrestrial

VK2ZAB	Gordon	57 SSB
VK3NX	Charlie	50
VK3PY	Chas	50 SSB
VK3NX	Charlie	48 SSB
VK3QM	David	48 SSB
VK3ZLS	Les	40 SSB
VK2KU	Guy	38
VK3BJM	Barry	38 SSB
VK3HZ	David	38
VK5AKK	Phil	38 SSB
VK2DVZ	Ross	34 SSB
VK2ZT	Steve	32 SSB
VK3BDL	Mike	32 SSB
VK3CY	Des	32
VK3WRE	Ralph	32 SSB
VK3PF	Peter	30
VK3PF	Peter	29 SSB
VK5BC	Brian	25 SSB
VK1DA/p	Andrew	24
VK3VG	Trevor	20 SSB
VK7MO	Rex	20
VK3UDX	Geoff	19 SSB
VK2TK	John	18
VK7MO	Rex	18 SSB
VK2AMS	Mark	17 SSB
VK2TK	John	17 SSB
VK3CAT	Tony	16
VK5BC/p	Brian	16 SSB
VK3BG	Ed	15 SSB
VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 SSB
VK4KZR	Rod	15
VK4CDI	Phil	14
VK4CDI	Phil	14 SSB
VK6KZ	Wally	13
VK2EI	Neil	12 SSB
VK2KOL	Colin	12 SSB
VK4TJ	John	11 SSB
VK2TG	Bob	10 SSB
VK3AL	Alan	10 SSB
VK3ECH	Rob	10 SSB
VK4FNQ	John	10 SSB
VK3VHF	Rhett	9 SSB
VK6KZ/p	Wally	8
VK7MO	Rex	7 Digi
VK2FLR	Mike	6
VK3DMW	Ken	6
VK4EME	Allan	6 SSB
VK6DXI	Mirek	6
VK1WJ	Waldis	4 SSB

VK2EAH	Andy	4 SSB
VK3PF	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK4CDI	Phil	4 Digi
VK2ZT	Steve	3 Digi
VK3VHF	Rhett	3 Digi
VK4AIG	Denis	3 SSB
VK4JAZ	Grant	3 FM
VK2DVZ	Ross	1 Digi
VK2KOL	Colin	1 Digi
VK2TK	John	1 Digi

432 MHz EME

VK4KAZ	Allan	14 CW
VK4CDI	Phil	13 Digi
VK7MO	Rex	10
VK7MO	Rex	9 Digi
VK3NX	Charlie	5 CW
VK3AXH	Ian	4 Digi
VK3HZ	David	4
VK2ZT	Steve	2 Digi
VK3VHF	Rhett	1 Digi
VK5BC	Brian	1

1296 MHz Terrestrial

VK3PY	Chas	39 SSB
VK3QM	David	39 SSB
VK3NX	Charlie	37 SSB
VK2ZAB	Gordon	29 SSB
VK3ZLS	Les	26 SSB
VK2DVZ	Ross	25 SSB
VK2KU	Guy	25
VK5AKK	Phil	24 SSB
VK3PF	Peter	20
VK3BJM	Barry	19 SSB
VK3KWA	John	19
VK3PF	Peter	19 SSB
VK3BDL	Mike	17 SSB
VK3HZ	David	17
VK3WRE	Ralph	17 SSB
VK2ZT	Steve	12 SSB
VK3VG	Trevor	12 SSB
VK4KZR	Rod	12
VK3BG	Ed	11 SSB
VK7MO	Rex	11 SSB
VK1DA/p	Andrew	10
VK2TK	John	10 SSB
VK3UDX	Geoff	10 SSB
VK3TLW	Mark	8 SSB
VK2AMS	Mark	7 SSB
VK3AL	Alan	7 SSB
VK3DMW	Ken	7
VK3ECH	Rob	6 SSB
VK3VHF	Rhett	5 SSB
VK3ZUX	Denis	5 SSB
VK4TJ	John	5 SSB
VK5BC	Brian	5 SSB
VK6KZ/p	Wally	5
VK4CDI	Phil	4
VK4CDI	Phil	4 SSB

VK6KZ	Wally	4
VK4EME	Allan	3 SSB
VK5BC/p	Brian	3 SSB
VK6DXI	Mirek	3
VK7MO	Rex	3 Digi
VK2FLR	Mike	2
VK3CY	Des	2
VK3PF	Peter	2 Digi
VK3QM	David	2 Digi
VK4AIG	Denis	2 SSB
VK4FNQ	John	2 SSB
VK4CDI	Phil	1 Digi
ZL3TY	Bob	1 SSB

1296 MHz EME

VK3NX	Charlie	43 CW
VK4CDI	Phil	30
VK4CDI	Phil	30 Digi
VK7MO	Rex	30
VK7MO	Rex	27 Digi
VK4CDI	Phil	3 CW

2.4 GHz Terrestrial

VK3PY	Chas	18 SSB
VK3NX	Charlie	17 SSB
VK3QM	David	17 SSB
VK3WRE	Ralph	11 SSB
VK3PF	Peter	7 SSB
VK3HZ	David	5
VK4KZR	Rod	4
VK6KZ	Wally	4
VK3BJM	Barry	3 SSB
VK1DA/p	Andrew	2
VK3PF	Peter	2 Digi
VK3VHF	Rhett	2 SSB
VK2AMS	Mark	1 SSB
VK2DVZ	Ross	1 SSB
VK2EI	Neil	1 SSB
VK3BG	Ed	1 SSB
VK3TLW	Mark	1 SSB
VK3ZUX	Denis	1 SSB

2.4 GHz EME

VK3NX	Charlie	30 CW
VK7MO	Rex	9
VK7MO	Rex	7 Digi

3.4 GHz Terrestrial

VK3NX	Charlie	14 SSB
VK3QM	David	14 SSB
VK3WRE	Ralph	8 SSB
VK3PF	Peter	6 SSB
VK6KZ	Wally	4

3.4 GHz EME

VK3NX	Charlie	12 CW
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5.7 GHz Terrestrial

VK3NX	Charlie	14 SSB
VK3QM	David	12 SSB
VK3WRE	Ralph	9 SSB
VK3PY	Chas	8 SSB
VK3PF	Peter	7 SSB
VK6KZ	Wally	4
VK3BJM	Barry	2 SSB
VK3PF	Peter	2 Digi
VK6BHT	Neil	2 SSB
VK3ZUX	Denis	1 SSB

5.7 GHz EME

VK3NX	Charlie	14 CW
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10 GHz Terrestrial

VK3PY	Chas	15 SSB
VK3NX	Charlie	14 SSB
VK3QM	David	14 SSB
VK3PF	Peter	9 SSB
VK3WRE	Ralph	9 SSB
VK6BHT	Neil	9 SSB
VK3HZ	David	7
VK6KZ	Wally	5
VK3TLW	Mark	3 SSB
VK2EI	Neil	2 SSB
VK3BJM	Barry	2 SSB
VK3DMW	Ken	2
VK3ZUX	Denis	2 SSB
VK4KZR	Rod	2
VK7MO	Rex	2
VK1DA/p	Andrew	1
VK3BG	Ed	1 SSB

10 GHz EME

VK3NX	Charlie	14 CW
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24 GHz

VK6BHT	Neil	3 SSB
VK2EI	Neil	2 SSB
VK3NX	Charlie	2
VK6KZ	Wally	2

474 THz

VK3WRE	Ralph	3
VK3HZ	David	2
VK7MO	Rex	2
VK7MO	Rex	2 Digi
VK7TW	Justin	2
VK7HAH	Ben	1 Digi
VK7TW	Justin	1 Digi

Additions, updates and requests for the guidelines to Guy VK2KU.

The guidelines (and the latest League Table) are also available on the VK VHF DX Site at <http://vhfdx.radiocorner.net> Click on Gridsquares.

Next update of this table will close on or about 11 June 2010.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

International SOTA Weekend, 1-2 May 2010

Tom Read M1EYP

After the success of last year, the Summits on the Air Management Team announce another "International SOTA Weekend", to be held first weekend in May.

The original concept by Sean M0GIA was for an event to encourage summit to summit contacts between the many International Associations that comprise SOTA, and to give Chasers the opportunity to work as many different associations as possible.

This does mean that HF may be required but does not mean that this is solely an HF event; all licensed bands can, and where possible should, be used to make contacts. The choice of operating band and mode is left to

the individual activator as always.

The International SOTA Weekend in 2009 was such an overwhelming success the MT proposes that this should become an annual event on the first weekend in May every year. The first weekend being defined as the weekend that immediately precedes the UK May Day public holiday (which is always the first Monday in May).

This year the International SOTA Weekend will be held on the 1st and 2nd of May 2010 and all prospective activators are encouraged to post their planned activations on SOTAwatch as soon as is practicable.

SOTAwatch: <http://sotawatch.org>

SOTA website: <http://www.sota.org.uk>

Silent Keys

Mike Eden VK7ME

It is with great sadness that I inform you of the passing of Mike Eden VK7ME at 10.00 am Monday 15 February 2010. Mike was a very active amateur on our HF bands for many years and he started as an amateur in the UK in the early 1950s.

Mike saw service in the Merchant Navy before and during the Second World War, and joined the Royal Air Force as a Morse decoder, stationed at Changi after the war.

He returned to England for a number of years then moved to Australia with his wife Irene, living in NSW for a short time before moving to Tasmania.

I first met Mike in the early 70s at my first Myalla JOTA, by this time Mike and Irene had settled happily in Mount Hicks.

We will miss you Mike, your gift of the gab, your quick wit.... now a silent key. Vale, Mike.

Submitted by Dale VK7NDH, Sec/Treas: West Coast Radio Group

Boy (A.G.) Cory VK2DTH

North Star, NSW, Australia

Boy passed away peacefully on 2 March 2010, aged 98.

He was a keen amateur gaining may global DX awards including 5BDXC.

Boy was a pilot with rank of Flight Lieutenant during WWII and also a qualified navigator.

He returned to the family property at North Star after the war, he married Olive and had two children.

Boy is survived by his children Elizabeth and Peter and his grandchildren, all of whom he was very proud.

Boy encouraged me to become an amateur, a hobby I still enjoy to this day.

Submitted by Tim Barthelson VK4VI.

OTY letters

IRLP came to VK5RMN The Bluff At Port Pirie

It is now over twelve months since IRLP was installed on The Bluff at Port Pirie.

IRLP was installed with little consultation with the locals who use the repeater. I once challenged one of the installers as to why this was so and was told the Whyalla and Moonta Radio Clubs were contacted and agreed that IRLP be installed.

As I have monitored the repeater for quite sometime and over a lot of hours since installation I wish to report the following on its use.

I have only heard one member from the Whyalla club, one from the Moonta club, three from Port Pirie and the occasional call from operators outside The Bluff area using IRLP. I can name at least six local operators who

no longer use this repeater, since the IRLP installation.

I hear the tone noises being entered and nobody calling or talking, operators using the nodes with out calling to see if it is in use along with many other unusual ways of using the repeater.

After the installation I received two pages on how to operate the IRLP node and "Rules for using IRLP nodes". I wonder how many that use it also received a copy?

It is a real shame to note that operators are not using the repeater because of the above.

I wish to ask, "Is it really worth having IRLP on this repeater"?

Paul Meier VK5MAP

Around we go again

Dear Sir,

Due to an interest in the "Library Amateur Radio Displays" (AR Nov. 2005) and an enquiry from NZ, I have started the Displays on their merry way again. There is a new batch of inquiring minds that have matured over the five or six years since the first round was started and also advancements in amateur radio and electronics have taken place.

I am pleased to have received some complimentary comments but my offer to assist other States is still to be taken up. Unfortunately I am starting to battle 'Mr Parkinson' which is interfering with my home-brewing but "them's the breaks".

Graeme Wilson VK6BSL

DXnews & views

VK4OQ, P.O. Box 7665, Toowoomba Mail Centre, QLD 4352.

E-Mail: john.bazley@bigpond.com

At the time of going to press we still have not received any definitive information on the forthcoming DXpedition to Annobon Island in April, apart from focusing on the low bands, and with an emphasis on CW. The team have promised to announce full details at the beginning of April.

Sang Hoon Lee **DT8A** plans to be QRV on CW (with a preference for this mode), SSB and RTTY from the South Shetlands covering all bands from 160-10 m until 31 January 2011. The station is located on King George Island, King Sejong Station on the Barton Peninsula. Sang says he is with the 23rd "overwintering party." Sang's home call is DS4NMJ. QSL via HL2FDW.

Preparations continue for the **3W6C** Con Co Island, Vietnam expedition, with departure for the island in early April. The operators will fly on an A380 from Zurich to Singapore, then on to Vietnam. All the laptop logging computers have been set up with the logging software. The last shipment of gear being sent on ahead goes out early this month, March. The team expects to be on the air from April 10 to 18 with four stations "on 24/7", emphasizing the low bands and targeting North America and Europe. The **3W6C** Website can be found at www.3w6c.qrv.ch

Ciro PY7ZY, Fred PY2XB, Jim PY7XC and Andre PY0FF will be active as PW8J from Ilha dos Lencois, in the IOTA group SA-041, from 9 to 15 June. They plan to have three stations with two amplifiers, verticals and wire antennas. From 16 to 18 June they will operate as **PW8L** from the island of Sao Luis, IOTA SA-016. QSL to P.O. Box 152, Joao Pessoa - PB, 58010-970, Brazil. The website for the expedition is at www.pw8j.com [TNX PS7AB].

Marion Island. Pierre ZS1HF has announced he will be active as **ZS8M** from Marion Island (AF-021) "from the end of April once the 'SA Agulhas' has returned to Cape Town". Pierre says he is taking up "the position of radio/

electronics technician for a year". Further information is expected in due course. Let us hope that this time we will see some activity from there!

Mike UK8OM reminds everyone when QSLing to **Uzbekistan**, do not send green stamps in your envelope as they are routinely stolen. Also effective January 2010 only envelopes produced in Uzbekistan can be mailed from that country. So Mike advises those QSLing stations in Uzbekistan to not send SAE but rather a mailing label.

If you need a QSL confirmation for any of these past **DK2WV** operations you have until April 2010 before Karl will close the logs: 3D2WV (Conway Reef), T33WV (Banaba) and 3V8W (Tunisia). His address is listed at www.qrz.com/db/dk2wv

Don Greenbaum N1DG reports that the **K4 Midway Island** DXpedition logs have been uploaded to LoTW and printed cards are expected to go out in March.

The Northern California DX Foundation (NCDXF) recently reports approving funding for the upcoming ZL8X (Kermadec) and E4X (Palestine) DXpeditions. Of late they have also agreed to support the 3C0C (Annobon) and YI9PSE (Iraq) DXpeditions.

Franck F4DTO and Patrick F4GFE will be active as ZA/homecall from Elbasan, **Albania** from April 15 to 24. They plan to operate SSB and some CW on 40 to 10 metres using 100 watts and monoband dipoles. QSL via home calls, bureau preferred.

Steve 9M6DXX has joined the team of operators who will be active from four **T32 IOTA** new ones in March-April. They plan to have four stations from two operating sites on each island. Four different callsigns will be in use: T32MJ (Malden Island, OC-279), T32SI (Starbuck Island, OC-280), T32CI (Caroline Island, OC-281) and T32VI (Vostok Island, OC-282). QSL via SM6CAS. The website for the expedition is at t32line.webnode.com

OD5/DL6SN is now in **Lebanon** and will stay until the end of the year. He plans most of his activity to be CW on 40metres through to 10metres. QSL via DO8LA.

Hugh K6HFA plans to operate from several **South Pacific** islands between March 3 and April 26 as follows: March 3 to 10 - **Samoa** (SW) OC-097; 12 March to 2 April **Tonga** (A3) OC-049, OC-123 and OC-064; April 6 to 12 **Wallis** (FW) OC-054; April 13 to 21 **Tuvalu** (T2) OC-015; April 23 to 26 **Fiji** (3D2) OC-016 or OC-156. He will operate CW, SSB and maybe some RTTY on 80, 40, 30, 20, 17, and 15 metres, with 100 watts and a vertical. Further information is expected in due course. QSL via home call.

Alex UX4UL has his **Maldives Islands** licence to operate starting on February 18 through to May with the callsign 8Q7IA. He is will be on CW and PSK on 40, 20 and 17 metres. QSL via UY5ZZ.

4L3A in **Georgia** plans to be in the CQ WPX SSB events (the latter the last weekend in March). Operating will be UR9QQ as 4L9QQ, 4L2M, 4L4CC and 4L5D), with three operating desks, an Icom IC-775 with 1 kW to a quad and two-element 80 m delta switchable from 300 degrees to 120 degrees and an inverted V for 160; an Icom IC-756PRO3 with kW and 3-element Spiderbeam for 20, 15 and 10, plus a 2-element 40 m inverted V; and a Kenwood TS950SDX to 500 watts amp and 15 and 10 m Spiderbeam, plus a dipole for 40.

The planned S2DX (Bangladesh) IOTA expedition to AS-127, St. Martin's Island, has been postponed. The licence and operating permission have not arrived in time. This was scheduled for the third week of February. Organizers continue talking to the authorities to get everything in order for early rescheduling. Keep an eye on their website: www.s2dx.org

In Radio Arcala news, Ville OH2MM is making a permanent relocation of QTH to **Brazil** where he has the callsign PY2ZEA. Look for him on the

air soon. He will operate from CR2X in the Azores in his "farewell operation from Europe" OH2BH and OH2PM, Martti and Pertti, will join him there as a multi-op in the ARRL Contest. QSL via OH2BH.

Larry VQ9LA says the **VQ9X** log periodic antenna has been repaired by a US Navy antenna team. It now has new half-inch hardline, and the cyclone damage repaired. The repairs took a crew of seven people, and a 135-foot bucket truck, four hours.

Michele IK5ZUI moved to his new home on Nosy Be Island (AF-057) and will be QRV from there as **5R8UI** for about one year. QSL via IZ8CCW.

For the collectors of eQSL's, The DX and HF Contesting Committee of the DARC and the operators of the Electronic QSL Card Centre (www.eQSL.cc) have agreed to set up a development partnership. The goal is to create an electronic server-to-server transmission system for submission of electronic QSLs (eQSLs) to the online DARC Contest Logbook (DCL). Soon

eQSL users will be able to transmit their eQSLs electronically into the DCL for application of various DARC awards.

Tevfik TA1HZ reports that the Turkish Special Wireless Activity Team (TCSWAT) will be operating as **TC57A** from 22 April to 25 April from **Kocacimen Tepe** overlooking the **ANZAC Beach** (KN30dg) using 100 W Yaesu FT-857 rigs and dipoles plus a Diamond BB7V vertical. They will be looking for contacts with VK amateurs. However; if there will be any VK hams coming over for ANZAC Day to Gelibolu, our team will be more than happy to have them as our guests at the camp area and at the mike – in the field we usually use 145.500 / 433.500 MHz for simplex activity.

Good luck in the pile-ups until next month

Special thanks to the authors of The Daily DX (W3UR), 425 DX News (11JQJ) and QRZ.DX for information appearing in this month's DX News & Views. For interested readers you can obtain

from W3UR a free two-week trial of The Daily DX from www.dailydx.com/trial.htm



TX4T operators: Nigel G3TXF, Jacques F6BEE, Phil FO8RZ and Gilles VE2TZT.

ROSS HULL CONTEST – LIST OF WINNERS 1950 – 2010

1950 - 1951	VK5QR	R. Galle	1980 - 1981	VK6KZ	W. J. Howse
1951 - 1952	VK5BC	H. Lloyd	1981 - 1982	VK6KZ	W. J. Howse
1952 - 1953	VK4KK	A. K. Bradford	1982 - 1983	VK6KZ	W. J. Howse
1953 - 1954	VK6BO	R. J. Everingham	1983 - 1984	VK6KZ	W. J. Howse
1954 - 1955	VK4NG	R. Greenwood	1984 - 1985	VK3ZBJ	G. L. C. Jenkins
1955 - 1956	VK3GM	G. McCullough	1985 - 1986	VK3ZBJ	G. L. C. Jenkins
1956 - 1957	VK3ALZ	I. F. Berwick	1986 - 1987	VK3ZBJ	G. L. C. Jenkins
1957 - 1958	VK3ALZ	I. F. Berwick	1987 - 1988	VK5NC	T. D. Niven
1958 - 1959	VK3ALZ	I. F. Berwick	1988 - 1989	VK5NC	T. D. Niven
1959 - 1960	VK4ZAX	D. R. Horgan	1989 - 1990	VK3XRS	R. K. W. Steedman
1960 - 1961	VK3ARZ	W. Roper	1990 - 1991	VK3XRS	R. K. W. Steedman
1961 - 1962	VK5ZDR	M. J. McMahon	1991 - 1992	VK3XRS	R. K. W. Steedman
1962 - 1963	VK4ZAX	D. R. Horgan	1992 - 1993	VK3XRS	R. K. W. Steedman
1963 - 1964	VK5ZDR	M. J. McMahon	1993 - 1994	VK3XRS	R. K. W. Steedman
1964 - 1965	VK3ZER	R. W. Wilkinson	1994 - 1995	VK3XRS	R. K. W. Steedman
1965 - 1966	VK3ZDM	J. R. Beames	1995 - 1996	VK2FZ/4	A. Pollock
1966 - 1967	VK5HP	J. H. Lehmann	1996 - 1997	VK2FZ/4	A. Pollock
1967 - 1968	VK3ZER	R. W. Wilkinson	1997 - 1998	VK2FZ/4	A. Pollock
1968 - 1969	VK5ZKR	C. M. Hutchesson	1998 - 1999	VK3XPD	A. P. Devlin
1969 - 1970	VK3ZER	R. W. Wilkinson	1999 - 2000	VK3EK	R. G. Ashlin
1970 - 1971	VK4ZFB	E. F. Blanch	2000 - 2001	VK4TZL	G. R. McNeil
1971 - 1972	VK5SU	J. W. K. Adams	2001 - 2002	VK4TZL	G. R. McNeil
1972 - 1973	VK5SU	J. W. K. Adams	2002 - 2003	VK3EK	R. G. Ashlin
1973 - 1974	VK5SU	J. W. K. Adams	2003 - 2004	VK3EK	R. G. Ashlin
1974 - 1975	VK5SU	J. W. K. Adams	2004 - 2005	VK3UH	L. Mostert
1975 - 1976	VK5SU	J. W. K. Adams	2005 - 2006	VK4TZL	G. R. McNeil
1976 - 1977	VK4DO	H. L. Hobler	2006 - 2007	VK3KAI	P. L. Freeman
1977 - 1978	VK3OT	S. R. Gregory	2007 - 2008	VK1DA	A. Davis
1978 - 1979	VK4DO	H. L. Hobler	2009	VK3EK	R. G. Ashlin
1979 - 1980	VK3ATN	T. R. Naughton	2010	VK2ARA	E. Thrift

VK6news

Keith VK6RK - vk6rk@wia.org.au

Greetings all VK6ers and welcome to this month's VK6 notes.

We have had a fair bit of activity recently including the Hills ARG Annual Sale on Saturday 27 February, which was well attended by the local amateur population. A report from the group has not arrived so as I was there myself I will take the liberty of reporting.

It was a very hot day, 37°C, and traders inside the hall were definitely cooked! There were about 100 people through the doors and the sausage sizzle did a roaring trade. There had been a generous donation of raffle prizes from Kylea of Hamshack and Ian VK6LCT of Timberden Plant Hire which made for a fair bit of interest when they were drawn. The winner of the FT-897D was Jack VK6KDX and, as he had gone home by then, I accepted the prize on his behalf and delivered it on my way home. Jack was delighted as he is a lover of these radios and already owns two of them!

Second prize was an FT-817, won by Brian VK6ABM and third prize was a 2 m/70 cm collinear vertical won by Mark VK6??? All in all a good turnout on a hot day and, I believe, the traders did well too. It was also good to see Mick VK6IN, the former HARG secretary, up and about after his recent illness.

Now a report from Terry VK6ZLT, from the WA VHF Group.

The WA VHF group would like to announce that the Busselton beacons VK6RBS, 1.3 GHz and 10 GHz, are now back on air after a long period of silence whilst looking for a suitable operating site. Many thanks go to the untiring effort of Wayne VK6JR to establish an interim home in Dunsborough on the way to a more established site in the offing. Many thanks, Wayne.

Club activities have started well this year with the members fine tuning and troubleshooting of their newly acquired SDR receivers to "noise in the ham shack" with an excellent introduction by Cedric VK6CD. Forthcoming discussions involve the

promotion of amateur radio from a VHF/UHF perspective in conjunction with the Centenary celebrations in our September time slot.

Thanks Terry and we look forward to hearing more of the SDR saga.

In last month's notes I made a request for information about the Morse/telegraph key collection of Dave Couch VK6WT SK. I have had some considerable input from local amateurs and by the time this appears in your mail box I hope to have some positive news to report, please watch this space. It would be a terrible shame if such a fine collection could no longer be displayed for all to see. I believe the majority of amateurs enjoy the beauty of a Morse key even if they do not have the skills to do them justice! I certainly do not have the skills, but I am working on them.

The contest season is upon us and by the time you read this the John Moyle Field Day will have been and gone. I hope the reports of outdoor activities will be available for inclusion in the May notes column. I believe at least two local groups are planning a bigger effort than last years and maybe the pictures will follow? The NCRG will be making their usual big effort in the CQWW WPX SSB contest on 27-28 March and I'll report on that next month.

I will also report on the NCRG Open Day at the Neil Penfold State Amateur Radio Centre (NPSARC) in Whiteman Park, which was held on Sunday 14 March. I hope you were all there and you were one of the lucky prize winners!

I would like to take this chance to ask the group Secretaries out there to contact me



First prize – Keith VK6RK receives the first prize, a FT-897D, on behalf of Jack VK6KDX.

on my email address and fill me in on your membership numbers, special projects, aims, anything at all. It is all appreciated and this is a way of letting other local amateurs, who may not belong to your group, find out about you and maybe even join up.

All the very best DX and see you next month.



Second prize – Brian VK6ABM receives the FT 817

VHF/UHF An Expanding World

David Smith VK3HZ

vk3hz@wia.org.au

Weak Signal

David Smith VK3HZ

At this time of year, the weather conditions in this region can produce some quite intense tropo openings over relatively short distances.

For instance, on the evening of 1 March, the VK5RSE beacon, over 430 km away, was 5x9+ on all its operating bands (2 m, 70 cm and 23 cm). It was a similar strength the following morning. These are the times when the microwave enthusiasts at each end need to drag their gear up to a nearby hilltop because it is almost certain that the microwave bands will be open for good contacts.

Colin VK5DK in Mt Gambier experienced some good conditions recently to the west. He reports:

On the morning of February 19, there was a 144 MHz opening to VK6 with two contacts to the far south-west corner of VK6 from Mt Gambier (south-east corner of VK5) – distances of 2365 km (VK6JR) and 2325 km (VK6APK).

Wayne VK6JR (Dunsborough) called CQ beaming east (2306 Z 18/02) and I contacted him with a 5 x 5 report sent and received a 5 x 2 report in exchange from Wayne. At the conclusion of the contact at 2310 Z, I was called by Alek VK6APK (Marrion) with 5 x 3 reports both ways. Alan VK3XPD could not hear anything of VK6JR, but did hear very weak signals from VK6APK.

During the opening the VK6RST 144.564 MHz beacon (Mt Barker) and VK6REP (Esperance) 144.567 MHz beacons were both around S5 but nothing heard of the VK6RPH beacon in Perth. It was found out later that the VK6RST (Mt Barker) 70 cm beacon was off air due to storm damage, as reported by Rob VK6LD, but it is hoped to be back on air very shortly.

The VK6REP beacon increased in signal strength and was up to S7 at 0200 Z.

I was fortunate to meet Murray ZL3MH at the recent Hamfest in Kyneton. Murray lives in the outskirts of Christchurch and so has a fairly formidable attenuator between his QTH and VK. Nevertheless, he has managed to work into VK on 2 m. He sent the following:

I specialise in 6 m and 2 m DX and have worked quite a few VK3 stations including right into Melbourne on 2 metres.

We have had only one two metre opening to VK this season, on 6 January. I worked Ross VK2DVZ 5Z, later S9, VK2AMS and heard Neil VK2EI. If it had not been for John ZL3AAU following the Pagers and Ch 5a and his ring around, nothing would have been worked.

I still use the same gear I have had for many years. My gear is a T2-element Yagi fed with LDF4-50 coax at 10 m, 80 watt MRF245 HB amp, FTV250 with mods, FT101ZD MK3 on two metres. On six metres, there is a 4-element Yagi to FTV650B and a FT101ZD MK3. We have 8000 ft of Southern Alps in the way, so Sporadic E is the only way.

Here, all DX contacts are over 2000 km.

VK5MC EME Activities

Chirs VK5MC near Millicent sent the following report of his EME activities:

I came on 1296 MHz for the full moon on 30 January just to see who might be around and was expecting a lot. I heard some Digital signals and tuned down the band and was surprised to hear a strong SSB signal. 8J1AXA was on for their moon rise also and was in contact with Dave VK2JDS. I waited until their contact was over and received a 5x6 report from them and gave a 5x5.

Their station is an 18-metre dish, which has been operational on 144/432 and now 1296 MHz. They said that they should be able to work a station running 10 Watts to a 3-metre dish on CW, and even less on JT65.

Any information on their operation

can be obtained on the 8J1AXA web site. For those who wish to try, they also have a logger operating.

I continue to be amazed at the simple operation of my VK5DJ tracking system which has been upgraded with a built-in time clock, so that I do not have to start from scratch each time I get a power glitch – something that seems to happen quite a bit out in the bush. The tracking system has many user-defined variables in it for moon and satellite tracking. It has a wide range of encoder inputs, depending on your needs, including a simple potentiometer. John VK5DJ does still have some boards available for this project.

I have been playing with a SDR Softrock receiver here and have just been able to get it going, but it certainly looks promising for those wishing to see a segment of the band be it microwave or some other band. Currently I am able to see 90 kHz of 1296 MHz, and can see at a glance any JT, SSB or CW station that may be on at that time without turning a dial. Information will be presented at GippsTech in July.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au



In our

Year 100

If each member recruited just

1

other non-member amateur to the WIA, we would increase our membership by

100
percent

Who do you know?

Starting up with Small Station 2 metre EME

Wayne VK5APN reports: *Well being only new to the digital modes (and getting back seriously into AR) for some 3 weeks, I realised that the moon was going to be in a good position and close to earth on 30/31 January. I emailed EA6VQ (Gabriel) as his Web site indicates that he can work people off the moon who have a single Yagi and 50 W*

So I got up a bit earlier before the MS session on the Saturday. The moon was near the horizon, listened but heard nothing. The next day went out at 0400 and the moon was up at 30 degrees. A bit high. So I went to the N0UK logger. I saw ES6RQ posting his frequency. So as I was passing time for the moon to get closer to the earth, all of a sudden I see JT65b traces on the screen. Decoded as ES6RQ. I could not believe it as the moon was at about 20 degrees elevation. So started calling him, and succeeded in working him.

Then came the entourage of callers all trying to work a unique grid (PF). I almost succeeded with Joop (PA0JMV) saw his RO but nothing decoded into text at -30. Did try with Joop for the next 3 days, but no contact occurred. Call signs exchanged both times, then he only decoded my calls twice, then nil; for the 3 days attempts. [Wayne completed with PA0JMV on 27 February and EA6VQ and I2FAK on 28 February 2010]. My set up is an IC-706, Dick Smith amplifier kit running 80 W into 10 m of RG-213 coax to a 10 element YU7EF Yagi, 6 m high. No Preamp, no elevation and no high stability oscillator or GPS locked. I was simply over the moon.

New digital mode ROS

José Alberto Nieto Ros has introduced a new Digital mode called ROS which has potential for application at VHF with weak signals. Information and download can be found at <http://rosmodem.wordpress.com/2010/01/30/ros/#comments>

The mode has speeds of 16 and one baud with faster speed being designed for typing speed and the slower speed for very weak signal work. The mode is based on spread spectrum techniques implemented as FSK and includes

Forward Error Correction (FEC). It is designed to cope with interference and issues such as multi-path propagation and might overcome the problem that JT65 suffers on terrestrial contacts with meteors.

Computer to computer testing against a noise source shows the slower speed works reliably to around -27 dB which is similar to WSJT's deep search decoder but with the flexibility to send any random piece of text. It has been used successfully on HF and there are a few examples of successful EME contacts but many users are reporting difficulties on VHF.

Testing between VK3II (FT-736) and VK7MO (IC-910H) showed that it performed reliably at around -24 dB with VK7MO transmitting and decoded very poorly the other way. A test between VK3VHF (IC-910H) and VK7MO (IC-910H) showed that ROS was reliable to around -22 dB both ways.

It seems the main problem is that ROS uses a very wide bandwidth from 400 to 2625 Hz and that many rigs may not be able to TX or RX the full range of frequencies. The problem is even worse as the mode is designed to cope with frequency errors of up to +/-200 Hz which means one needs a bandwidth from 200 to 2825 Hz on receive.

As this column was being prepared a new version of ROS (version 2.2.4 designed for EME) was produced with narrower bandwidth (about 100 Hz) which should be a significant help with typical VHF receivers and transmitters. A signal generator test of this new version was carried out to compare it with JT65a in the RF environment using an IC-910H receiver. The tests results are all referenced to the WSJT dB scale with the signal generator modulated with the JT65a or ROS signals. To provide a reference for the test the signal generator level was adjusted so that JT65a was just decoding reliably with the Kotter-Vardy decoder (no prior knowledge) at which level WSJT was reporting a signal level of -24 dB, consistent with K1JT's measurements. The ROS results were then obtained by reducing the signal level from -24 dB to -30 dB with the levels and

decodes as shown below

-24 dB

RX: <02:07 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:10 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:13 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <CANCEL>
RX: <02:16 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:22 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>

-26 dB

RX: <02:25 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC LO <STOP>
RX: <02:29 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:32 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:35 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>

-27 dB

RX: <02:38 UTC> <9.8 Hz.>
VK3II/VK7MO QE37PC O/O <STOP>
RX: <02:41 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC SOO <STOP>
RX: <02:45 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>

-28 dB

RX: <02:48 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <02:50 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <CANCEL>
RX: <02:53 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC MIO <STOP>
RX: <02:56 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>

-29 dB

RX: <02:59 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC>400 <CANCEL>
No Frame Acquisition
RX: <03:05 UTC> <9.8 Hz.> VK3II
VK7MO QE37PC OOO <STOP>
RX: <03:08 UTC> <9.8 Hz.> 4A7TI
VK7MO QE37PC OOO \$HGW
<CANCEL>

-30 dB

No Frame Acquisition
RX: <03:13 UTC> <9.8 Hz.> VK045
VK7MO QE37V% #?O<CANCEL>
No Frame Acquisition
No Frame Acquisition

While there are some errors in the

ROS decoding at -26 and -27 dB it is still giving about 50% correct decodes at -28 and -29 dB which is similar JT65a in the Deep Search mode. Following the signal generator tests a brief tropo-scatter test at 250 mW was conducted between VK7MO and VK3II over a 520 km path with ROS version 2.2.4 in EME mode with the results below:

250 mW ROS

RX: <23:15 UTC> <0 0 Hz> VK3II
VK7MO QE37 OOO <STOP>
RX: <23:17 UTC> <0 0 Hz> VK3II
VK7MO QE37 OOO <STOP>
RX: <23:22 UTC> <0 0 Hz> VK3II
VK7MO QE37 OOO <STOP>

RX: <23:25 UTC> <0.0 Hz> VK3II
VK7MO QE374\$KJ9?=<STOP>
RX: <23:32 UTC> <0.0 Hz>
VK3II VEM6GT?W#XIM4C\$?QO=
<CANCEL>

250 mW JT65a

233900 1 -25 -1.1 0 3 * VK3II
VK7MO QE37 0 10
234000 5 -23 -1.6 0 3 * VK3II
VK7MO QE37 1 10
234100 1 -27 -1.1 0 12 * VK3II
VK7MO QE37 0 10
234200 1 -25 -1.1 0 3 * VK3II
VK7MO QE37 0 10
234300 0 -30 3.9 0 18 NIL
DECODE

234400 3 -25 -1.2 0 3 * VK3II
VK7MO QE37 0 10

While tropo-scatter varies considerably such that many more tests would be required to achieve reliable results this initial testing does suggest that ROS provides comparable performance to JT65a on tropo-scatter and may be slightly better if there is no prior knowledge of the call signs.

As this report was being finalised a further new version 2.2.5 was released so things are changing very rapidly.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au

The Magic Band – 6 m DX

Brian Cleland VK5BC

February provided some good Sporadic E openings early in the month and then late in the month the first TEP openings for a long time with one excellent opening from VK4 to JA.

On 3 February, a good late afternoon early evening opening from VK5 to ZL, VK1, 2, 3, 6 & 7 which extended from VK6 to ZL in the early evening with Kerry ZL2TPY working several VK6s. During the opening Norm VK7AC worked Kaz VK8ZKZ in Alice Springs, good to hear a station active from the Alice area; it has been very quiet since Jeff VK8GF moved back to SA. Also good to hear Rick VK6XLR in Geraldton WA, Grid Square OG71hf back on the air and active on 6 m. This is a reasonably rare grid square and he is currently the only 6 m operator in the area and Rick reported he worked John VK1JST 55, Bob VK2ABP 56, Ken VK3AKK 57, Norm VK7AC 59, John VK7XX 57, Noel VK3FI 57, Alex VK5ALX 57, Brian VK5BC/p 55, Roger VK3FZ 57 and Gerry VK2APG 57 during the opening. Rick says 'not bad for 60 minutes work and his first 'dogpile' and apologies to those who missed out'.

On the morning of 10 February, the band opened early with very strong signals from VK5 to VK4 Brisbane area. Brian VK5BC completed good contacts with VK4s FIL, JMC, DDC, ID, TBW/m, RY, WTN, ACE, WM, and CC. Same morning Brian VK4EK in Sapphire worked David VK3AUAU and Bob

VK3ZRT and Col VK4CC had several contacts into VK3 & 7. Col reports he was in QSO with Mike VK3KTO when they heard Ken VK3ZER in Bonbeach, Victoria call. We were Ken's first ever 6 m contact which was both a surprise and an honour, even more so when Ken revealed that he was running 6 W into a double bazooka at two metres above his gutter line. The double bazooka was broadside east/west and Ken was a solid 5x4 to Logan City, Queensland. Always good to hear of new stations on 6 m and hope this contact may encourage Ken to become a regular 6 m operator.

Received a note from Bernie VK4KAC Sunshine coast reporting on his January 6 m activity:

'Apart from working A35A on and off through the month I was lucky enough to work VK9NA on 3 January at 2135 on 6 m not long after they came up on air at 5x3 but the signal lifted shortly after our contact to 59 and then just as quickly as they came up they were gone and the Southern boys got to work them.'

A bit later in the day at 0240 I worked VK4APE in Charters Towers for a new Grid on 6 m at 5x5, and then went on to work Dave VK9WBM on Willis island for yet another new grid on 6 m at 5x5, then to cap off my day I worked 3D2JS on 6 m also at 5x5 both ways for yet another new grid.

All in the same day which I was very

pleased with, I also worked a number of stations on 2 m SSB but I have not listed them.

I believe that 3D2JS was using a loaded up 20 m wire dipole on 6 m.

Below is my list of stations worked on 6 m for January 2010, some of them more than once not a lot but I was not always at my station:

VK1DJA.
VK2APG, KNS, BHE, ADM, AH, ARA, BGL.
VK3AUAU, AIG, HJ, CCR.
VK4APE (some locals not listed)
VK5DK, GA, ZK, PJ.
I did hear a VK6 come up briefly and go.
VK7PD, XX, AN.
ZL2AO.
E51A Beacon was heard several times but have not worked him yet.
VK9NA, VK9WBM.
3D2JS.
A35A.

Not bad from a vertical at 6.5 m, as the beam was down for repairs.'

Steve VK3OT in Western Victoria experienced a good TEP opening to Japan early evening on 21 February and reports at 0730 UTC he was hearing VK8RAS/b weakly and then as the TEP extension kicked in at 0800 UTC JA6YBR/b 50.017 peaking 599. Steve then worked the following stations all on CW:

0809 UTC JA6AZU 110 PM51mp
 0810 UTC JG3LEB 110 OSAKA
 0813 UTC JH3JNF 110 PM53eo
 0815 UTC JH3LBD QSY 105 Koh
 Hyogo PM74
 0816 UTC JA5FFJ 50.105 Take
 PM63un
 0817 UTC JE6URC Taka Kumamoto
 0818 UTC JA6WJL Nagasaki
 0819 UTC JE6KJT
 0821 UTC JA6GWX Fukuoka
 0822 UTC JF6TAC
 0823 UTC JH6CDI Nagasaki
 0824 UTC JR6EXN Hida Fukuoka
 0825 UTC JA4DWR Taka PM63
 Yamaguchi
 0825 UTC JA6KTY Kei Fukuoka
 0826 UTC JA3APL Taka Kyoto
 0829 UTC JA6LYY
 0833 UTC JA4FM Aki
 0835 UTC JH6MXV
 0836 UTC JA3EGE Ken Osaka
 0840 UTC JA1RL WJST 50.195
 The JA6YBR/b was still 579 0850
 UTC but fading and at 1000 UTC the
 VK8RAS/b faded out.

of 27 Feb. Gary VK4ABW reports:

The Chinese TV on 49.750 was rising fast at 0600 Z so I started calling CQ on 50.110. At 0645 Z, Willem DU7/PA0HIP answered me and we quickly exchanged a 5/5 report. About 5 minutes later Willem was up to 59 and still calling so we exchanged 5/9 reports, with Willem then QSYing down to 50.105 leaving 110 clear. I put out a few more calls but the Chinese TV was going down rapidly so I gave it away.

Then at 1000 Z I heard the 49.750 TV rising again and reached 30 over 9 shortly after. A check for beacons revealed the JA2IGY, JA6YBR & JA1ZYK beacons coming in nicely at 1043 Z, so I put out a CQ on 50.110 and was immediately swapped by JAs.

I QSY'd to 50.130 and proceeded to work JK1NMY, JO3DDD, JA6UDI, JE2LDW, JH7GYG, JN1GHS, JA1GHR, JI4DJM, JE2EHP, JA2IVK and JE6DOI from 1044 Z till 1100 Z.

I then did another quick check of the beacons, which were pounding in at 59 so it was back to 50.130 to call QRZ. I then worked JA6WJL, JH4ADV, JF1UVJ, JE2KUC, JH6BPG, JG3LGD, JM1TWR, JE3PCP, JA1SFL, JA4DLP, JA6BDB, JH1NYM, JH4DYP, JR3JFZ, JR4IMV, JK3NSD, JE6HJT, JQ3DUE, JA3EGE, JA1QVM, JA1BAN, JA6KTY, JA3MNC, JA4SVS, JR1EMM, JR3KQJ, JM1WBB, JA6TEW and JA2CXH from 1102 Z till 1153 Z with many stations 5/9 plus.

I could hear the band shifting west (typical for evening TEP) and a cursory check for beacons revealed the JA beacons were going down.

I spotted the Okinawa Island beacon coming in S/S and was surprised to hear the Hong Kong beacon on 50.075 at S3. Another quick call on 50.130 netted JH3DMP and JM1SGJ at S2 and S3 respectively at 1157 Z. I checked 50.110 and could hear the JAs calling but did not respond as the band was shifting very quickly.

I then spotted some SSB on 50.115 (IC-7700) and went to investigate finding VR2XMQ at S5 calling CQ. We exchanged reports at 1215 Z and I

stayed on frequency but did not hear him working anyone after our contact. We chatted for a few more minutes around 1225 Z before finally giving it away. I then QSY'd back to 50.110 and worked JE6AZU at 1240 Z S7 for my last contact that evening. The JAs were still calling at 1330 Z but were extremely weak by then.

On the same evening (27 February) Stuie VK8NSB in Darwin who has put up a 3 el Yagi worked Joel KG6DX Guam.

Norm VK3DUT's reports a good summer season and in between his work commitments working many stations including 9V1TT Singapore and VK9WBM Willis Island as new ones. Norm is now using 4x7el Quads, picture below.

New release

Adam VK4CP has recently released another update of VK LOGGER (www.vklogger.com) and if you are interested in VHF/UHF activity in VK it is definitely a site you should visit.

Finally sunspot cycle 24 is picking up and we are starting to see some interesting conditions as reported above on 6 m and it will be interesting to see what March/April brings us. Keep a lookout on VK LOGGER.

Please send any 6 m information to Brian VK5BC at briancleland@bigpond.com

On 24 February the best TEP opening for over a year to Japan from an area covering VK4 (Mackay south) to northern VK2 occurred. Brian VK4EK in Saffire reported:

Heard weak SSB 0335 UTC on 50.110.

Band to JA opens 0337 UTC with JA1RJU worked with 5/9++ both ways. (weak SSB and then bang! 5/9++ signal.)

Band closes at 0613 UTC.

Worked 33 JAs in that period, most signals 5/9 and some 5/9+. Could have worked many more JAs but had a few breaks and spent time listening for HIs, etc.

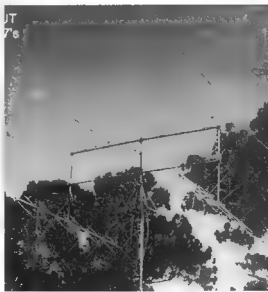
Worked JA areas 1, 2, 3, 4, 7 & 8.

Heard one very weak BY??? call on 50.110, but too many JAs on the frequency.

When the band opened both 49.750 and 43.650 were 5/9 and stayed that way most of the times I checked, same as last winter JA TEP opening when I worked a few JAs.

During this opening Paul VK4MA in Hervey Bay reported working over 100 JA plus 2 x HL (Korea) stations and stations in the Brisbane area and Mike VK2OT near Grafton worked several JAs.

Another good TEP opening from Northern Queensland on the evening



The antenna array of four seven-element Quads belonging to Norm VK3DUT.

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I am looking to purchase a copy of Radio Theory Handbook for Amateur Operators 3rd edition by Fred Swanston. Do you have this book and no longer want it? I am willing to pay reasonable money for this book.
Email Chris at vk4vkr@wia.org.au, QTHR.

FOR SALE - SA

The popular VK5JST Antenna Analyser kits are still available - see AR article December, 2009. Our apologies to those who were unable to get a kit recently, but parts were in short supply. This has now been rectified. Build yourself an extremely useful item for your shack, and improve your HF antenna efficiency. For more details see www.scarc.org.au
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VK9NA Norfolk Island (RG30xx)

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- Ballarat Amateur Radio Group

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All photos by Kevin VK4UH **ar**



Alan VK3XPD attaching the 23 cm feed to the 1.2 m dish.



Snap shots from Norfolk VK9NA

Clockwise from above
Norfolk Island aerial view (photo courtesy VK9NI).
Kevin VK4UH operating CW to VK on 23 cm - "the grass key".

Operating set-up at Mt. Pitt site, (the island's communication towers in the background).
Sunset on Mt. Pitt. (Photos by Kevin VK4UH)



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